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CMR MARKET INDEX

CHEMICAL MARKETING
REPORTER's market index of
chemical and related materials
(100=1974 average), based on
97 key commercial chemicals,
appears alongside with data for
two weeks ago, last month and
last year.

Chemical Prices Start on Page 3

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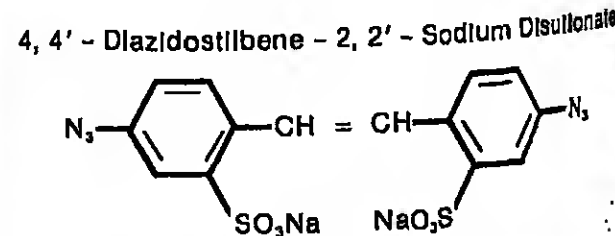
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CHEMICAL MARKETING CUES

CHLORINATED SOLVENTS: Firms state higher prices for them.
BETA-CAROTENE: The number of firms in the business multiplies.
LINEAR ALKYLATES: Detergent use is maturing by 1988.
HELIOTROPINE: The pricing trend should rise.

Chemical Marketing Reporter

Published weekly by Schell Publishing Company, Inc.

NEWSPAPER

INSIDE CMR

ON RESINS: Dow is optimistic about the outlook for polyethylenes and polystyrenes. Cost outlook vis-a-vis glass, paper and rubbers well. Page 3

SUPERFUND: Rep. Florio says Administration infighting threatens the new superfund program. He sees OMB usurping powers rightfully belonging to EPA. Page 5

WASTE INDUSTRY: The outlook for hazardous waste management is expected to be at an average annual rate of 13 percent for the next five years. Page 5

NUCLOS: This business seems poised for a growth spurt, as NUCLOS announces expanded production at its Lafayette, Ind., syn gas plant. Page 7

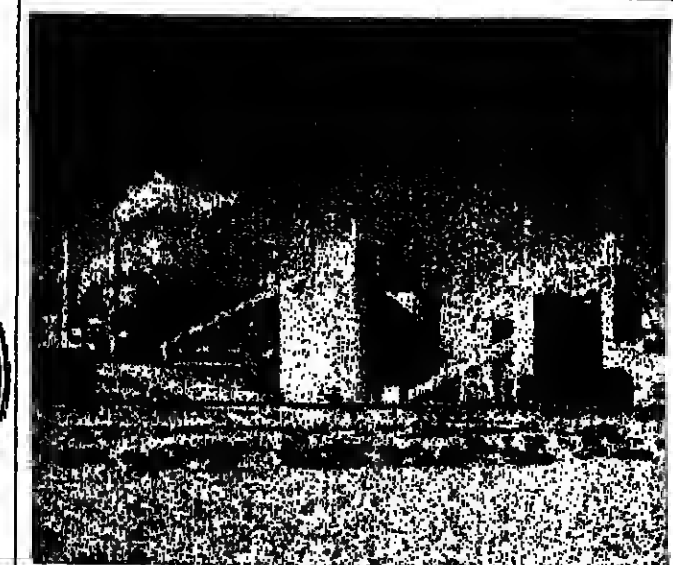
NECHST-CHELANESE: A request by FTC for more data on merger, but it seems unlikely that a significant challenge to the proposal will emerge. Page 9

NEW PATENTS: Canadian drug prices will not be unduly impacted as a result of amendments to the Drug Patent Act, consumer affairs minister says. Page 18

WELSHOL BUYOUT: Management completes the buyout of the specialty chemicals firm from Farley Industries for a price that has not been disclosed, reports says. Page 46

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Soda Ash Picture Is Bright

During 1978, soda ash producers made a record amount of product at operating rates unmatched since 1980. Next year is expected to be equally strong, and producers hope that profitability, long a sore spot for the business, will begin to follow suit.

Probably the most telling sign of the industry's strength this year is what Bill Breunig, FMC Corporation marketing director for soda ash, termed "a ten-point improvement in operating rates" as compared to 1986.

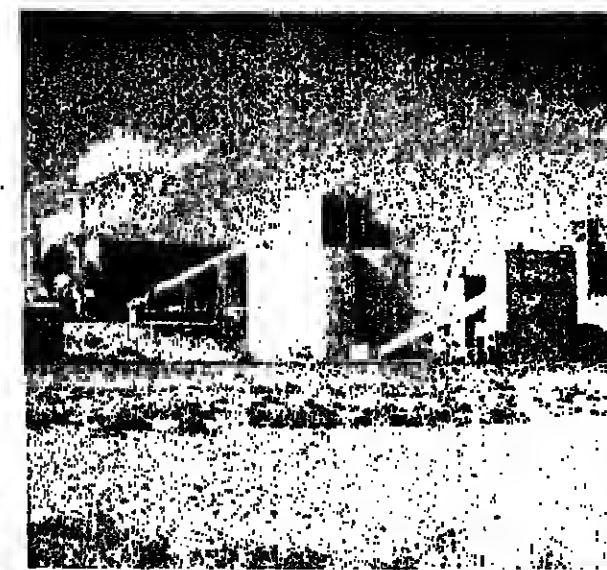
Higher operating rates are coming as a combination of an overall production increase for the year of about 1 percent, and the simultaneous effect of the closing of Central Chemical's Syracuse facility in January of this year.

Based on nameplate capacities, 1988 operating

rates should average between 84 and 86 percent. Most producers feel, however, that the industry effective capacity is overstated by as much as 700,000 tons, so that effective or actual operating rates are probably in the low 90's.

Soda ash demand varies cyclically depending on activity in specific end use segments. Mr. Breunig points out that in May and June of this year demand was so strong that producer stocks were drawn down by over 100,000 tons. Producers are poised to enter 1987 with stocks lower by almost that much, as compared to at the beginning of this year. Soda ash capacity continued on Page 20

TEXASGULF SODA ASH: At Green River, Wyo. Current output for the industry is in the upper 80 percent to low 90 percent range at capacity depending on what nameplate figure is used.



Toxic Waste Site Rules Issued to Protect Workers

Following known incidents of deaths from exposure to toxic chemicals, the Reagan Administration last week issued new health and safety regulations aimed at protecting up to 200,000 American workers at superfund and other hazardous waste sites.

The new regulations by Occupational Safety and Health Administration, which are effective immediately, were ordered by Congress last Fall when it reauthorized and renewed the superfund program for cleaning up thousands of abandoned toxic waste dumps.

The President and Congress have acted swiftly to respond, says DSHA director John Pendergrass. "Our action is part of a multi-agency effort to meet head-on the problems the nation faces because of decades of accumulating industrial and other wastes."

The rules require periodic medical exams at a minimum of 40 hours of safety and training for workers at both superfund and currently operating dumps handling hazardous wastes such as toxic chemicals and metals.

Some of the rules also apply to emergency cleanups, police, ambulance and other workers responding to spills and rail or highway accidents.

The interim final rule will remain in effect until October 18, 1988 when OSHA is required to issue a permanent standard. The agency estimates its standard will cover 25,255 superfund sites with 30,300 workers and about 200 active hazardous waste dumps with 300 workers.

As estimated 13,120 EPA-licensed hazardous waste haulers with 50,000 workers

are not covered by the interim rule since they come under regulations of the Transportation Department.

OSHA officials say they do not know the extent of the danger to site workers.

"The problem here is going into an unknown environment and assuring that workers are protected in it," says Thomas Seymour, an OSHA official who helped draft the regulations.

The regulations also require cleanup and dump operators to provide employees with proper protective clothing and equipment. In addition, they require extensive air monitoring of the sites for toxics, issuing detailed reports to employees on anticipated exposures that exist before they enter a potentially dangerous area and developing emergency response programs.

Frank A. White, deputy assistant secretary of OSHA, says the agency went beyond the minimum requirements mandated by Congress "in order to assure complete protection of hazardous waste workers." He says OSHA is targeting about 100 sites per year for inspections.

"We will attempt to focus on those sites where workers are present," says Mr. White. "If a complaint is filed by an employee, we would give that the highest priority."

While some members of Congress and labor unions have criticized OSHA during President Reagan's term for not adequately protecting workers' health and safety, Mr. White says, "OSHA has set its priorities and has limited resources. There are other concerned parties who have priorities of their own, but OSHA can move only so fast on so many issues at one time."

Biogen's Alpha Interferon Faces Patent Loss in Europe

The European Patent Office plans to revoke Biogen's patent for genetically-engineered alpha interferon, which is marketed in the US and Europe under the name "Intron A" by Biogen's licensee, Schering-Plough Corporation.

The patent office issued an oral decision on December 12, which is expected to be confirmed by a written opinion within three to four months, Biogen says it will "aggressively" appeal the final ruling.

According to Biogen, the patent office affirmed that "Intron A" is a patentable invention, but objected to the scope of the patent which was issued in 1984. The patent was too broad, such a narrow view of what is patentable as to render the allowable patent commercially useless, Biogen complains.

Roche-La Roche Inc., one of the firms that challenged Biogen's patent, says it filed the Biogen patent because it covers the precursor molecule to alpha interferon, rather than just the mature molecule. Roche is currently seeking a European patent for its own version of alpha interferon, known as "Roferon A."

Biogen says the European Patent Office's

action does not affect Schering-Plough's ability to market "Intron A" in Europe and does not affect "Intron A's" patent position in the US.

Earlier this year, Food & Drug Administration approved commercial use of both "Intron A" and "Roferon A" for treatment of hairy cell leukemia (CMR, 8/9/86, pg. 5). With that action, alpha interferon became the first product of biotechnology to be approved in the US for the treatment of cancer.

US marketing approval followed an agreement by Roche and Schering-Plough not to file patent infringement suits against each other's alpha interferon products in the US or Europe. The agreement did not prevent Roche from challenging the patent itself for "Intron A."

Biogen says worldwide sales this year of "Intron A" are expected to run somewhere between \$8 million and \$10 million.

Separately, Biogen said last week that it has agreed to license its gamma interferon cancer therapy to Baxia Travenol. Baxia will have exclusive rights except in the Far East and West Germany. The product is in phase three trials in the US for treatment of renal cell cancer.

Chemical Marketing Reporter

VOLUME 230
Number 25

DECEMBER 22, 1986

Dow Is Bullish On Plastic Outlook

Dow Chemicals USA is optimistic about the outlook for polyolefins and polystyrenics. Lee Shobe, general manager of Dow's Olefin & Styrene Plastics Department, reaffirmed the company's commitment to these markets at an informal update in New York last week.

Currently, he said, economic conditions, in particular improved cost position with respect to paper, glass and metal, bode well for the plastics in an atmosphere of increased consolidation, strong demand and high capacity utilization.

Growth should be sustained in older markets, while new products introduced this year are expected to find prominent niches, snatching some share from polypropylene, engineering thermoplastics, EVA copolymers and ABS resins.

Despite the "reverse shock" which hit the plastics industry when crude oil and derivative raw material prices plunged early this year, margins have improved, Mr. Shobe stated, and the plastics markets either been "on track," or have outperformed last year's projections.

Growth this year has been particularly dramatic in the polystyrene extrusion and molding markets, which grew by 10 percent, three times the growth rate seen from 1981 through 1985. Disposable packaging, particularly for fast-food and durable electronics end markets led the way, Mr. Shobe said.

The market for high density polyethylene, he adds, grew 8.8 percent this year, 70 percent of the 9.2 percent overall growth it saw from 1981 through 1985. New applications, particularly increased use of the plastic in oil bottles and chemical storage tanks, are said to have fueled this growth.

For the future, Dow expects at least 4 percent growth for polystyrene next year, with 4 to 6 percent growth for polyethylene. Capacity utilization should move up modestly through debottlenecking and incremental expansions.

Raw material cost and supply is "not the immediate issue," Mr. Shobe reiterated. Crude oil is expected to remain at its current price levels for some time to come. Feedstock processing versatility will be the determining factor; ability to shift between heavy and light feedstocks will be the best cost protection.

Currently, capacity utilization for HDPE is said to be 99 percent of nameplate; rates for the more mature LDPE market are around 84 percent. Polystyrene capacity has been rationalized this year, even with less capacity, utilization stands at 83 percent of nameplate and 100 percent of effective total.

Given strong demand, expansions are probably inevitable, but, Mr. Shobe noted they will be implemented with caution. Debottlenecking and incremental increases will be initial steps.

"Ongoing restructuring and increased investment in new capacity will be the best cost protection."

Continued on Page 44



LDPE PRODUCTION: At a Dow Chemical facility the company says industry LDPE output is 84 percent of capacity.

Handwritten note: 1986 12 22

Laboratory Standards Urged By Union, Which Sees Safety Lack

The Federal government should take stronger action to protect laboratory workers from health hazards than the measures proposed by Occupational Safety & Health Administration, says the AFL-CIO. A standard proposed by OSHA covering laboratories in the chemical industry, hospitals and universities "is so weak and so vague that it will provide little protection to laboratory workers who are exposed to hazardous substances," says AFL-CIO safety specialist Margaret Seminario.

In similar comments to the agency, the International Chemical Workers Union and Public Citizen Health Research Group charged jointly that OSHA "seems far more concerned about saving laboratory employers some money than protecting laboratory employees from well-documented health hazards."

In a letter to OSHA officials, Ms. Seminario says the agency's proposed rule, which would pre-empt other Federal standards, would actually "diminish protections afforded these workers" currently.

The proposal would permit laboratories to develop plans for protecting workers based on their "unique" working conditions. OSHA's performance-oriented proposal notes that laboratory workers will be exposed to lesser amounts of a greater number of chemicals, but those workers and their supervisors are "usually highly trained and knowledgeable" about the hazards involved with the chemicals they use.

As a result, Ms. Seminario says OSHA's proposal would exclude "almost all specific protective requirements found in other standards."

"No level of performance is specified" Continued on Page 45

Kellogg Joint Venture Has PRC Contracts

SinoKellogg Engineering Company, a joint venture of China Petrochemical International Company and M.W. Kellogg Company, has been awarded contracts valued at \$75 million for two plant projects.

The company will provide a 60,000-ton-a-year linear low-density polyethylene unit at Lanzhou for Lanzhou Chemical Industry Company, using gas-phase, fluid-bed PE technology developed by BP Chemicals Ltd.

The grassroots LLDPE plant, located within an existing petrochemical complex, will start up in 1990. Ethylene will come from an adjacent plant currently being modernized to use Kellogg's proprietary short-reaction time furnace technology.

The SinoKellogg joint venture will also modernize a 1,000-metric-ton-a-day ammonia plant at the Dong Ting nitrogen fertilizer complex at Yueyang, Hunan. The project is scheduled for completion in 1989. The ammonia-based plant is one of 10 ammonia production facilities provided to the People's Republic of China by Kellogg during the 1970's.

The PE and ammonia projects are the first undertaken in China by Kellogg under the joint venture since it was formed in 1984 to provide engineering and construction services both inside and outside the PRC.

Fiber In Flight Of Voyager

The experimental Voyager aircraft, which is being flown around the world without stopping or refueling, is constructed largely of graphite fiber supplied by Hercules Incorporated and uses a new synthetic aviation fuel developed by Mobil Oil Corporation.

According to Hercules, 90 percent of the Voyager's structure is lightweight "Mamamite" graphite fiber. The fiber is embedded in an epoxy resin, producing a composite that is stronger than steel, lighter than aluminum and stiffer than titanium, Hercules says.

The Voyager had a total weight at take-off last week of 9,750 pounds, including 7,000 pounds of fuel.

Plans call for the Voyager to be in flight 300 hours or more without stopping or refueling. Such a flight would not be possible with conventional aviation oils, according to Mobil, because they require changing every 25 to 50 hours.

Methylene Chloride Replaced by Eastman

Eastman Chemical Products Inc. says its technical service and development laboratories have found two effective solvent blends as replacements for paint strippers containing methylene chloride.

One blend contains 5 percent "Ektapro" EEP solvent, 30 percent MAK and 20 percent n-butyl alcohol, while the other contains 40 percent "Ektapro" EEP solvent, 50 percent MAK and 10 percent "Ektasolve" EEP solvent. According to the company the compounds' laboratory evaluations confirmed that they are effective in stripping household-type paints such as alkyl enamels, latex paints, varnishes and shellac.

Blend No. 1 was found to have a flash point of 103°F and blend No. 2 had a flash point of 112°F. Both were reported to be as effective as paint strippers made with methylene chloride in tests on oil-based alkyl enamel paints. Aromatic hydrocarbons could be added to the blends to lower cost; however, Eastman's tests have shown that a decrease in effectiveness would result.

Blend No. 1 is more economical to use than blend No. 2 because n-butyl alcohol is used. However, it contains a lower level of ketone and glycol ether solvents in order to obtain a flash point above 100°F and is not as active as blend No. 2.

Fermenta's Founder Relinquishing Post

Refaat el-Sayed, founder and president of Sweden's Fermenta AB, will reportedly turn over a 43 percent interest in the firm to AB Industrivaerden, a holding company, to settle debts amounting to almost \$80 million. Mr. el-Sayed's remaining 33 percent stake in Fermenta is being held as collateral for other debts.

Montedison SpA earlier dropped plans to buy Mr. el-Sayed's interest in Fermenta after he sold key assets to other parties. AB Industrivaerden, meanwhile, reportedly plans to sell its stake in Fermenta at a later date.

Mr. el-Sayed and other Fermenta board members are expected to be replaced at a special shareholders meeting. Swedish authorities are investigating Fermenta board members for possible insider trading of Fermenta stock.

Monsanto Loses Benzene Lawsuit

Monsanto Company has been ordered by a Federal grand jury in Texas to pay \$108 million to the family of a former Monsanto plant worker who died of leukemia in 1980. Monsanto says it will appeal.

The company, found to be grossly negligent in failing to monitor benzene exposure levels at its Chocolate Bayou facility, argued unsuccessfully that there is no medical link between benzene exposure and the type of leukemia that afflicted the plant worker.

Monsanto further argued that it constantly monitored benzene exposure levels and that they were consistently "well below" the Federal exposure standard of 10 parts per million. The company said the plant was designed to limit exposure to 1 part per million.

Orphan Drug Grants

Food & Drug Administration has awarded 21 grants for the development of orphan drugs and other products during the 1987 fiscal year that began October 1. That is the largest number for any year since the orphan products program began in 1982. An orphan product is one intended to treat rare disorders and thus has little likelihood of commercial development.



R.W. Schar, who has been appointed senior vice-president, international, at Lubrizol Corporation. He was most recently senior vice-president for agricultural and chairman of Agriculture, a Lubrizol subsidiary.

Polypropylene Plant Slated in South Korea

Himont U.S.A., Incorporated, last week said that, together with Mitsui Petrochemical Industries, Ltd. (Japan), it has signed an agreement with Honam Petrochemical Corporation (South Korea) that will grant to Honam Petrochemical a license for Himont's "Spheripol" process for a new 80,000-metric-ton-per-year polypropylene plant to be constructed at Yeochon City.

The process was developed by Himont with technology generated under a cooperative research and development agreement with Mitsui. It involves loop reactors liquid monomer and fluid bed gas-phase polymerizations with high-yield high-steric-specificity (HY-HS) catalyst to produce resins and a range of impact copolymers.

Honam Petrochemical already operates an 80,000-metric-ton-per-year polypropylene plant at Yeochon City.

Analytical Laboratory Bought by Ohio Firm

Environmental Treatment and Technologies Corporation, Findlay, Ohio, says it has acquired Toxicon Laboratories, Inc. of Baton Rouge, La., making it the fifth in ETTC's network of environmental analytical facilities.

Toxicon Laboratories, Inc., founded by Michael Crouch, specializes in toxic and hazardous waste analyses. According to James L. Kirk, president and CEO of ETTC, the acquisition of Toxicon will allow ETTC to expand its analytical and data base management services in the Gulf Coast region of the country.

Terms of the acquisition were not disclosed.

ETTC, based in Findlay, is the nation's leading environmental services firm engaged primarily in the application of on-site treatment technologies to solve industry's environmental problems.

Dynamit Nobel Expanding Silanes

Dynamit Nobel Chemicals has begun a two-phase expansion of storage and production capacity for organofunctional silanes at its Theodore, Ala., plant.

The first stage of the expansion program is already under way with a 50 percent increase in bulk storage capacity scheduled to be in place in the first quarter of 1987. Construction has also started on the second stage, a 30 percent increase in production capacity, due for completion during the third quarter of the year.

Chemical Marketing Reporter

Volume 220 December 22, 1986
Founded October 18, 1971, by William D. Allen
Directed 1980-1986 by Harry J. Schnell
Schnell Publishing Company, Inc.
100 Church Street, New York, N.Y. 10037-2094
(212) 732-8820. Telex Number: 228131 CHEMUR
Cable Address: Reporter, New York
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Neh M. Carroli, Robert W. Wobeser
CHICAGO (312/577-8880)—Charles H. O'Connor,
James C. Oestmann, Arlington Publishers
Representatives, Inc., P.O. Box 1555, Arlington Heights, Ill. 60008
HOUSTON (713/550-8820)—Wilson S. Weyer,
Publication Services, Inc., 4201 Fm 196,
West, Suite 310, Houston, Tex. 77058
LOS ANGELES (213/460-9001)—Richard H.
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Arthur R. Kaveler
**CHEMICAL MARKETING
REPORTER** (ISSN 0009-2363)
Vol. 220, No. 51, December 22, 1986
Published weekly by Schnell Publishing Company,
Inc., 100 Church Street, New York, N.Y. 10037-2094
U.S.A. Second-class postage paid at New York, N.Y., and at additional mailing offices.
Postmaster: Send address changes in U.S.A. to Chemical Marketing Reporter, 100 Church Street, New York, N.Y. 10037-2094. Outside U.S.A. send to: Schnell Publishing Company, Inc., 100 Church Street, New York, N.Y. 10037-2094.
Subscription rates: \$100 per year in advance. Single copies \$5.00. Payment in U.S. dollars only.
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Rep. James J. Florio

Chloralkali To Be Restarted At Taft, La., Site

Ocidental Chemical Corporation last week announced a completion schedule for a project to bring back on stream 450 tons per day of idled chloralkali capacity at its Taft, La., plant.

According to Jack Hurst, senior vice-president of manufacturing and corporate engineering for OxyChem's Electrochemicals, Delagant & Specialty Products Group, the timetable calls for approximately one-third of the idled diaphragm cell capacity to be restarted by April 1987. The remainder will be restarted by mid-year.

"Upon completion of this project, the Taft plant will have a total effective capacity of over 1,650 tons per day of chlorine and over 1,400 tons per day of caustic soda," says Mr. Hurst.

"In addition, this start-up will contribute to the local economy by adding about 50 jobs to the plant's existing workforce of over 350 company and contract employees."

Continued on Page 19

Dioxin Ban Suit Filed by Activists; Rule Criticized

The Hazardous Waste Treatment Council and Natural Resources Defense Council have filed suit in a US court of appeals against Environmental Protection Agency in an effort to modify the agency's recently final land disposal ban rule covering solvent and dioxin-containing wastes.

EPA's November 7 final rule established scope and conditions of restrictions on the land disposal of these wastes as ordered by amendments to the Resource Conservation & Recovery Act, the Federal toxic waste management law.

The agency's approach would allow vast quantities of solvent waste to escape the ban for two years, and even allow such wastes from deep cleanups to be disposed of in landfills, says Richard C. Fortuna, executive director of HWTC.

He says the move not only endangers public health but also punishes those firms that have invested in proper management. "Dioxin has been snatched from the jaws of victory," he says.

Continued on Page 45

Superfund Program Endangered by OMB, According to Florio

Rep. James J. Florio warned last week that the new superfund program is already being jeopardized by Reagan Administration infighting over environmental policy that has delayed a presidential order to implement the \$9 billion toxic waste cleanup program.

The congressman warned that cleanup of toxic waste sites under the expanded program has come to a virtual standstill because of the failure by the President to issue the Executive Order required to begin implementing superfund. No cleanup work can be approved without the order.

"In effect," says Rep. Florio, "implementation of long-term cleanup work at the 888 superfund sites across the country has come to a standstill pending the issuing of the new Executive Order for superfund."

He noted that a long delay in issuing the order for the original superfund program in 1980 substantially slowed the start of the program then.

Rep. Florio said the delay in issuing the Executive Order is resulting from the attempt by the Office of Management &

Budget (OMB) to gain an "unwarranted and unacceptable" veto power over all regulations and decisions by Environmental Protection Agency regarding the superfund program.

He said the final authority over superfund must remain with EPA and not with OMB because the White House budget office "has resisted aggressive environmental action and lacks the environmental sensitivity needed to clean up toxic waste sites."

Giving OMB the veto power it seeks over superfund decisions would "severely undermine the program," Rep. Florio warned.

He cited as an example OMB's effort to give all Federal agencies including the military, the authority to supervise cleanup work at their own waste sites when it was the "clear intent of Congress in the superfund law to give EPA authority over cleanups at all Federal sites."

In letters to OMB director James C. Miller and EPA Administrator Lee M. Thomas, Rep. Florio called on the agencies to end their dispute so that the President can issue

Continued on Page 45

Toxic Waste May Touch Off Industry Gain

The overall market for hazardous waste management and disposal is expected to grow at an average annual rate of 8.3 percent for at least the next five years, according to a new report by FIND/SVP, New York-based market research and information services company.

The firm estimates the current market at \$10.9 billion, and forecasts that as major suppliers continue to seize the commercial opportunities of waste control legislation and public pressure to clean up the environment, the total market will reach \$17.4 billion by the end of 1992.

"This industry is poised for increased growth because government controls are intensifying in response to public pressure," comments Peter Allen, manager of market research reports for the company. "Every segment of the industry is directly driven, defined, and in some cases created by legislation and regulations. Companies that generate hazardous waste will find its collection only as much as they have to, and the disposal of those wastes can take place only to the extent that the regulations allow."

The study covers the four major types of hazardous waste: liquid, solid and chemical wastes; air pollution; wastewater and water pollution; and nuclear wastes. There are several parallels applicable to the field as a whole:

- The industry is relatively new. Most participants didn't enter it directly, but were in some related operations and diversified into it.
- Market growth is entirely dependent on government legislation and regulation.
- Industry participants face high liabilities and risk extensive litigation fees and penalties.
- Entry is difficult, usually requiring large capital investments, special technologies, and legal expertise in complying with governmental regulations and controls. As a result, few new companies are emerging, and

Continued on Page 19

Drug Industry Faces Scrutiny In New Congress

Pharmaceutical industry executives should be "ready to testify" next year because the Democratic-controlled 100th Congress "will be much more active with hearings," says Sen. Dan Quayle (R-Ind.).

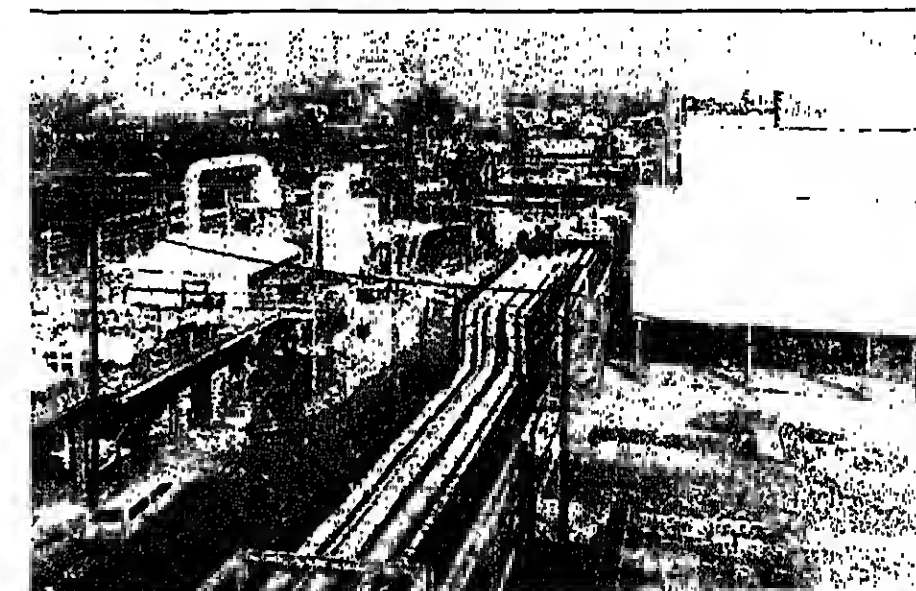
Sen. Quayle, a member of the Senate Labor & Human Resources Committee, told a Food & Drug Law Institute meeting in Washington that "anytime there is a media report of a problem, you should expect one or a series of hearings."

Although the health issues panel is likely to be more active under the chairmanship of Sen. Edward Kennedy (D-Mass.), than it was under his predecessor, Sen. Orrin Hatch (R-Utah), he said the coming change should not be overestimated.

"It is more a style of leadership that has changed," remarked Sen. Quayle. "It will still take strong bipartisan support to pass legislation."

He said a number of unresolved pharmaceutical industry issues left over from the previous Congress will be revisited, including process patents, drug diversion, "real and perceived problems," in the biotechnology field and FDA resources and user fees.

Sen. Quayle said he doubts that any "serious" major reform legislation affecting pharmaceuticals will be passed, but predicts "great potential" for bipartisan action on other drug industry matters.



CHLORALKALI AT TAFT: About a third of the idled capacity here will go back into operation, according to Occidental Chemical. This will take effective capacity to 1,650 tons a day of chlorine and 1,450 tons a day of caustic soda.

Groundwater Pollution Problems Studied by Chemical Engineers

Confusion about which government agencies should deal with groundwater pollution is a major obstacle to safeguarding the nation's water supply.

In a new whitepaper, a task force studying groundwater quality for the American Institute of Chemical Engineers says that "this multiplicity of responsible parties leads to duplication of effort, haphazard and uneven implementation of statutes, and a lack of accountability for the problem."

In addition to overlap among the 11 Federal and approximately 100 state agencies involved in the issue, the new report lists the expense of sampling and monitoring groundwater and testing the tens of thousands of new chemicals manufactured each year as

new problems hampering protection of the resource which accounts for half of the nation's drinking water. A shortage of scientists and engineers trained in hydrogeology and environmental chemistry and the complexity of the contamination issue, when "nearly every cleanup or prevention option has significant pros and cons," are also stumbling blocks, the engineers claim.

What are the possible solutions to these problems? The chemical engineers suggest that a comprehensive national groundwater policy that designates authority among existing agencies and consolidates their efforts

would be a start. This should alleviate financial pressures, they say, while speeding up government and industry efforts with clear guidelines.

The report also supports the Environmental Protection Agency's proposal to categorize the quality of different groundwater supplies. "It is unrealistic to try to protect all groundwater at a uniform standard," it argues, citing supplies that have been contaminated by salt water or naturally occurring toxins. The white paper stresses the importance of preserving groundwater that is currently clean from contamination.

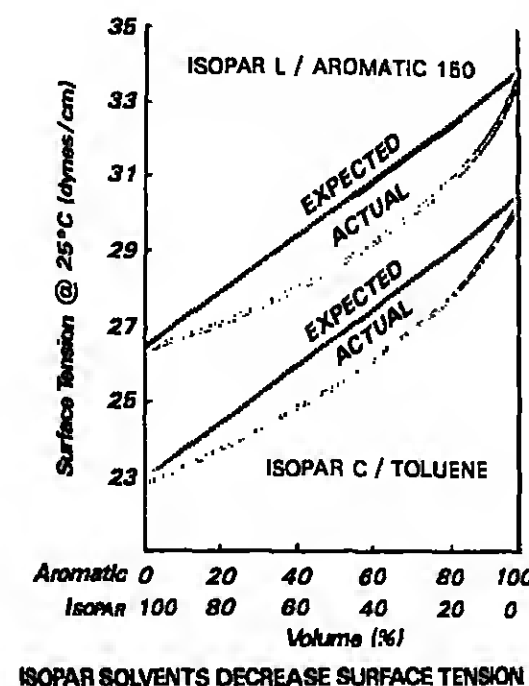
The chemical engineers recommend the use of risk-benefit analysis to set drinking water protection standards and, "despite the need for reductions in government spending," increased funding for groundwater research. "Planning and zoning development away" from supplies that are especially susceptible to contamination also "makes good long-term economic sense," they say. The engineers also call for government incentives to encourage the recycling or incineration of hazardous waste.

In addition to its recommendations on groundwater quality, the report also examines the technology for treating contamination and the impact of current laws on clean-up efforts.

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A.E. Staley Co. says it attracted Jean-Louis Greza and Fred Lampareur as corporate vice-presidents. Both are key members of the company's Industrial Chemicals Group and share responsibility for the company's European specialty chemical business. Mr. Greza serves as president of the group's new Division, headquartered in Lausanne, Switzerland, and Mr. Lampareur is president of the Industrial Products Division, headquartered in Paris.



Fructose Field Shifts As Staley Expands

Beginning in June of the coming year, domestic production of fructose will be stepped up to unprecedented levels. A.E. Staley Manufacturing Company has announced production plans for a line of crystalline fructose sweeteners called "Crystar" at its existing high fructose corn syrup plant in Lafayette, Ind.

Eventual production could rise to 100 million pounds per year. Production is scheduled to begin about June 1, 1987.

Questioned about production figures a Staley spokesman says, "We have developed a unique technology which gives us this production capability." The spokesman indicates plans to offer the product at about 35 to 60 cents per pound. Fructose currently sells between 75 and 90 cents per pound. Currently, US consumption of fructose is estimated at 10 to 20 million pounds per year.

In the past, the health food industry and also pharmaceutical companies have been the biggest consumers of fructose. But as the Staley spokesman explains, in addition to the traditional health food market, the company will also consider new markets for the product. As examples, he mentions baked goods and cereals. At this time, these markets use sucrose.

"To develop a larger market," says the spokesman for Staley, "means we need to be competitive in the general food industry." For the future, he sees partial replacement

industry by many customers because of its "all-natural" implications. As Malvin Wolk of sucrose with fructose in many different food systems."

Fructose is preferred in the health food industry by many customers because of its "all-natural" implications. As Malvin Wolk of sucrose with fructose in many different food systems."

Continued on Page 17



Dr. Hans Kopper, who has been named managing director of BASF Fiber Intermediates at the company's headquarters in Ludwigshafen, West Germany. He is currently president of the Fibers Division of BASF Corporation and executive vice-president of BASF Corporation.

EPA Enforcement Moves Set Records During 1986 Year

Environmental Protection Agency says 1986 was a record year in the number of enforcement cases developed, referred to the Justice Department and filed.

At the same time, the agency announced results of an inspection and enforcement effort over the last year against certain hazardous waste storage and disposal facilities. "We have significantly increased our enforcement efforts to put the regulated community on notice that violations of the nation's environmental laws will not be tolerated," says EPA administrator Lee M. Thomas.

EPA shares with the states environmental compliance and enforcement responsibility, notes Mr. Thomas. "The combined federal and state enforcement actions are at an all-time high. As a result of our efforts, the nation's environmental compliance and enforcement program is dynamic and healthy. By all measures the program is moving forward."

In fiscal year 1986, the agency referred 20 judicial cases to the Justice Department, compared with 176 last year. Cases involving violations of the Federal Clean Air and Water Acts accounted for over 200 of these referrals; over 80 case referrals involved violations under Federal hazardous waste laws.

The states referred 543 cases to state courts compared with 513 referrals last year. The Department of Justice filed 245 cases in 1986 which were referred by EPA. The year before, Justice filed 241 cases.

EPA's 10 regional offices developed and referred to EPA headquarters or directly to the Justice Department a record 388 cases, up from 323 cases last year and 93 cases in 1981.

The agency also referred 45 criminal cases to the Justice Department this year, compared with 36 referrals last year. Criminal charges were filed against 94 defendants, which includes some from cases referred by other Federal agencies for violations of environmental laws. The year before, 40 such charges were filed and 123 in all previous years combined.

Sixty-seven defendants were convicted or entered guilty pleas this year, compared with 37 last year and 109 in all previous years combined.

Federal judges imposed fines totalling \$1.6 million against environmental criminals and prison sentences of 124 years, of which over 31 years will be served (the remaining years suspended).

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Monsanto Links Biotech With Agriculture's Survival

A Monsanto Company executive last week urged American farmers to use genetic engineering and other new technologies to increase their productivity and efficiency.

Addressing the Conference on Technology and Agriculture in Washington, D.C., Howard Schneidmeyer, senior vice-president for research and development at Monsanto, said that high quality production must be controlled. "American agriculture is to retain its domestic markets and expand its foreign sales."

"Our emphasis for several decades was in quality of production—yield—with much less thought given to efficiency of production," he said. "But the new trend is toward precision agriculture." More and more successful farmers will aggressively adopt new technologies to reduce the real costs of production.

He pointed to fertilizer as one of the most important input costs for farmers, noting that technology offers new ways to protect crops and enhance yields, thereby lowering expenses for chemicals and fertilizers. He said, "We may also see the application of genetically engineered root-colonizing and microorganisms to provide part of the fertilizer for the future."

of the modern "precision farmer" is an emphasis on crop quality.

To compete effectively with mass production in less developed countries, American farmers will want to differentiate their products through superior quality, he said. Mr. Schneidmeyer said biotechnology will enable farmers to grow crops with higher protein content and better milling and baking qualities.

In the area of environmental impact, he noted that biotechnology will eventually yield crops that have been genetically engineered with natural defenses against pests and diseases.

New generations of microbial crop protection products and enhancers of production efficiency will provide the "ultimate in environmental friendliness," because they utilize natural protection, he said.

Mr. Schneidmeyer called for innovative new partnerships between research universities, industry and government to ensure the rapid application of new science to agriculture.

The Conference on Technology and Agriculture Policy is sponsored by the Board of Agriculture of the National Research Council, the Kennedy School of Government, at Harvard University, the National Center for Food and Agricultural Policy, and Resources for the Future.

Ceramic Product Shipments To Triple in Next Ten Years

Shipments of advanced ceramic products in the US will approach \$2 billion in 1987 and by 1995 the market will exceed \$6 billion, according to a new research report from International Resource Development Inc., Norwalk, Conn. - based market research firm.

US vendors in several segments have been "taken to the mat" by Japanese competitors, the company says, but adds that it sees "some interesting niches" in which domestic vendors would likely survive and prosper.

On the whole, the outlook for advanced ceramics in the US is favorable, but growth will depend on how well managers respond to competition from the Japanese and their current work dominance of many advanced ceramics markets, says Jean Buffham, a member of the IRD research team that compiled the report.

Shipments of advanced ceramic products

have grown from \$630 million in 1980 to nearly \$1.5 billion in 1985. Most of this growth was generated through increased demand for electronic products, most notably integrated circuits and ceramic capacitors.

Electronic components will continue to lead growth in shipments, but starting in the late 1980's mechanical applications, particularly heat engine components, will play a more significant role in market growth, IRD says.

The report finds that between 1990 and 1995, the value of domestic advanced ceramic shipments is expected to nearly double, led again by the demand for electronic components and even more rapid growth in heat engine ceramic applications.

In the field of electronic componentry, advanced ceramic materials are often outperformed and under-priced by their plastic counterparts, but it's felt an end to this plastic

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Formaldehyde Record Reopened By OSHA for Public Comment

Occupational Safety & Health Administration has reopened the record on the proposed revision of its formaldehyde standard to include new information and allow the opportunity for public comment on the new information.

The information concerns epidemiologic studies of persons exposed to formaldehyde, additional data on employee exposure to formaldehyde in the foundry industry, and other feasibility-related issues.

"We believe full consideration must be given to studies and data which became available after the formaldehyde record was closed last August but which are relevant to key issues raised during public hearings on the proposal," says assistant secretary of Labor for OSHA John A. Pendergrass.

"Public interest dictates that we not only consider this new information but that the public have an opportunity to comment on it."

He stresses, however, that the limited reopening of the record for 30 days will not

alter OSHA's September 1987 target date for issuing a final standard to limit worker exposure to formaldehyde.

Under its December 1985 proposal, OSHA is considering two regulatory alternatives: either a comprehensive standard if evidence points to formaldehyde as a human carcinogen; or a simple amendment to the current permissible exposure level (3 parts of formaldehyde per million parts of air averaged over eight hours) if the record indicates that the primary health concern is mucous membrane irritation and sensitization.

In either case, the proposal would lower the permissible exposure level to 1.0 or 1.5 ppm for the estimated 338,000 workers exposed above the 0.5 ppm level.

The new information includes:

- A reanalysis of a National Cancer Institute study on "Mortality Among Industrial Workers Exposed to Formaldehyde" by T.D. Sterling and J.J. Weinman.
- Two reports on formaldehyde and can-

Continued on Page 21

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News Capsule

Montedison to Acquire

Montedison SpA is expected to acquire Antibiotec of Spain at a cost of as much as \$200 million. The Spanish company, with annual sales of some \$145 million, produces pharmaceutical intermediates and is active in antibiotics research.

J.T. Baker Sale Fails

Ashland Oil Inc. said Friday (December 15) that negotiations with Richardson-Vicks Inc. concerning the purchase by Ashland of J.T. Baker Chemical Company have been terminated. Ashland said it had been advised that Richardson-Vicks decided to discontinue efforts to sell J.T. Baker.

Jordan Expansion

Jordan Chemical Company has completed additions to its specialty surfactants plant at Folcroft, Pa., as part of an ongoing expansion program. A new high-pressure reactor, dedicated to production of "Jordapool" CI (sodium cocyl isethionate) will increase production of that surfactant by 50 percent. A second reactor will increase capacity for the company's line of surfactants (alkanolamides, betaines and sulfates, quaternaries and amine oxides) by more than 10 million pounds, the company says.

EP Unit on Line

Exxon Chemical's affiliate in France, Sotabo (Société du Caoutchouc Butyl SA), has completed a 30 percent expansion of its ethylene-propylene rubber plant at Vire-Dame-de-Gravillon to 65,000 metric tons per year. Exxon has additional EP rubber capacity of 70,000 tons per year at Baton Rouge, La.

Europe's Insurance Woes

European chemical producers are considering establishment of a re-insurance pool as a way of easing the insurance crisis over there. Details of the plan have not been disclosed but it is thought to involve a pooled system that will serve as a cover for insurance companies with chemical industry policies.

Westvaco Slates Plant

Westvaco Corporation, a producer of paper, packaging and chemical products, has announced a new resin size facility at Charleston, S.C., oleochemicals plant. The new facility will allow the company to substantially increase the production capacity of its size products, according to Westvaco.

ICI to Sell Assets

Imperial Chemical Industries Plc. has agreed to sell its oil and gas assets to Enterprise Oil Plc. in return for a 25 percent stake in the UK firm. Under the agreement, ICI will receive 71.9 million newly issued Enterprise shares for its energy assets.

Du Pont 'Vespe' Plant

E.I. du Pont de Nemours & Co. plans to build a new plant to manufacture "Vespe" polyimide parts in Mechelen, Belgium, to meet growing demand for high-performance plastics. The plant is scheduled to open in April 1987. A similar plant in Japan, opened in 1984. Du Pont expects European demand for "Vespe" parts to double by the early 1990's.

FMC Unit Acquires

FMC Corporation says its Spanish subsidiary, Foret SA, has purchased the natural sodium sulfate business of Barcelona-based Union Sallnera de Espana SA. The acquisition complements Foret's range of chemicals.

Phosphoric Probe Is Extended by US

The US International Trade Commission voted December 16 to allow the continuation of the investigation of dumping and subsidy charges filed by FMC and Monsanto regarding phosphoric acid produced in Belgium by Societe Chimique Prayon-Rupel SA and sold in the US by its exclusive chemical sales agent Nitron Chemicals Corporation of Greenwich, Conn. Prayon and Nitron's response was as follows:

"We're disappointed, but not surprised. This vote is only a first-step decision to proceed that in no way suggests the final outcome of a full study of the facts."

"We're encouraged that the chairman and vice-chairman (of the commission) voted against any further proceedings. We plan to cooperate with the commission and Department of Commerce, to defend ourselves successfully and to stay in the US as a responsible competitor."

The companies say success in this market is due to an advanced process that is more competitive than the thermal process still used by US producers.

Kaiser Agrees To Arrangement With Alan Clore

Kaiser Aluminum & Chemical Corporation, Oakland, Calif., said that its board had unanimously approved a definitive agreement with Alan Clore, a British investor and Kaiser Aluminum's largest stockholder, that implements the plan in form a holding company that was announced three weeks ago.

The plan is subject to consents by lenders and approval of shareholders of Kaiser at a meeting to be held early next year, after receipt of proxy materials.

The plan includes the creation of a new holding company, an infusion of \$140-million of new equity by an entity controlled by Mr. Clore, certain protection for non-Clore group stockholders and a continuation of present Kaiser Aluminum management.

Mr. Clore and Guy de Chabaneix, senior vice-president of Mosely Securities Corporation, have been elected directors of Kaiser Aluminum & Chemical, and Mr. de Chabaneix has been elected to the board's executive committee.

SmithKline Aims At 10 Percent Rate of Growth

SmithKline Beckman Corporation, is aiming for annual growth of operating profits of 10 percent year or better over the rest of this decade, Henry Wendt, president and chief executive officer, told a meeting with analysts in Philadelphia last week.

The company is projecting this year's sales at \$3.7 billion, a level supported by a brisk rate of sales and earnings growth in the fourth quarter, Mr. Wendt said.

The SmithKline CEO noted that a portfolio of cardiovascular drugs being developed in conjunction with an agreement with Boehringer Mannheim Pharmaceutical Corporation should reach the market in Europe in 1988.

SmithKline Beckman will have the responsibility for development, registration and marketing of these compounds in the US and Canada.

George Ebright, SmithKline's chief operating officer, noted that "Conlac," which has been withdrawn from the market following a tampering incident in March, has more than recovered its market share and is again the largest selling cold and allergy product in the US, with growth at more than 10 percent yearly.

Diamond Shamrock Rejects Mesa Proposal

T. Boone Pickens Jr., general partner of Mesa Limited Partnership, said late last week that he was dropping his \$2 billion bid to acquire Diamond Shamrock.

"We made a fair offer, and the Diamond Shamrock board turned us down," Mr. Pickens said in a statement. "They have adopted the standard approach of entrenched management: hire investment bankers and lawyers, reject and sue."

In voting to reject the acquisition proposal by Mesa Limited Partnership, Diamond's directors cited doubts about the value of the partnership units that Mesa offered to exchange for Diamond Shamrock's common stock.

Mesa Limited Partnership is an oil exploration and production company formed by Mesa Petroleum Company, Amarillo, Tex., both of which are controlled by T. Boone Pickens Jr., the oil industry raider who has previously attempted to acquire Cities Service Company and Unocal Corporation.

Diamond Shamrock's board said the offer was inadequate and that board members had specific concerns about the offer, "including the ability of Mesa to continue to make cash distributions to Mesa unit holders, the uncertain value of the units and the taxable transaction facing shareholders."

Mesa's proposal called for the exchange of one Mesa unit for each share of Diamond Shamrock common stock, 1.3 units for each share of Diamond Shamrock \$2.07 preferred stock and 2.75 units for each Diamond Shamrock \$4.00 preferred stock. It is one of the few merger proposals in which no cash at all is being offered.

In rejecting the proposal, Diamond Sham-

rock alleged that a recent Mesa filing with Securities & Exchange Commission shows that Mesa's cash flow from operations on an annualized basis was insufficient to fund its existing \$2.00 annual cash dividend.

Diamond Shamrock argued that the uncertainties about whether the dividend can be sustained directly affect the long-term value of the Mesa units since a decline in the dividend would result in a decline in the market price of the units.

Also, Diamond Shamrock claimed that the extremely complex Mesa proposal could take as many as two years to implement fully, which would make it even more difficult to project the consequences for Diamond Shamrock and its shareholders.

Another great drawback of the proposal, the company's directors stated, is that while it offers no cash to stockholders, many stockholders would face a tax liability to be paid out of their own funds. This, they added, would lead to selling of shares on the market to raise funds to pay the tax, with the result that the market price of the units would be subject to downward pressure.

Diamond Shamrock also told its shareholders that because of the way these partnerships function, unit holders have rights equivalent to those of stockholders in ordinary companies.

According to Diamond Shamrock, unit holders would have practically no voting rights. Also, the partnership does not hold annual meetings, and the unit holders do not elect a board of directors.

According to Diamond Shamrock's letter to shareholders, Mr. Pickens would receive approximately \$62 million if Mesa had acquired Diamond Shamrock.

Cyanuric Acid a Smog Cure?

Cyanuric acid, a pool chemical, shows promise in a process under development to virtually eliminate nitrogen oxide emissions from diesel engines and coal-burning power plants.

Heretofore, cyanuric acid has been known for its use as a stabilizer for chlorine in swimming pools, but the chemical is now viewed as a possible solution to such environmental ills as smog and acid rain.

The process, developed by scientists at Sandia National Laboratories in Livermore, Calif., uses cyanuric acid to convert nitrogen oxide into water, nitrogen and other gases, according to published re-

ports. Monsanto Company, which produces cyanuric acid, has been supplying the chemical to the Sandia scientists but has not been involved in any of the development work, according to a company spokesman in St. Louis, Mo.

Sandia operates the Livermore Combustion Research Facility, where the experiments are being conducted, for the Department of Energy.

The energy department owns the patent to any technologies developed at DOE-funded facilities.

The cyanuric acid process was disclosed in the journal *Nature* by Sandia scientists Robert A. Perry and Dennis L. Siebers.

Hoechst Merger Bid For Celanese Delayed

American Hoechst Corporation has received a request from Federal Trade Commission for additional materials in connection with its scheduled acquisition of Celanese Corporation.

The company has again extended the expiration date of the tender by its wholly-owned subsidiary Hostaleim Acquisition Incorporated for Celanese shares.

American Hoechst, a subsidiary of Hoechst AG, headquartered in Somerville, N.J., said it had already supplied voluminous materials in response to a second request by FTC for information pursuant to the Hart-Scott-Rodino Antitrust Improvements Act.

The staff of FTC, however, determined that further information is needed from American Hoechst before the FTC will consider American Hoechst in substantial compliance with the request.

American Hoechst continues to supply such information, most of it from various foreign affiliates of American Hoechst. The procedure has been drawn out not only by the amount of information needed to cover Hoechst's vast operations outside the US, but

because much of it has to be translated from German and other languages into English.

As extended, the offer for all of Celanese's outstanding common stock, convertible preference stock and 7 percent second preferred stock will expire at 5 p.m. eastern standard time tomorrow, December 23, unless it has been further extended.

American Hoechst said that it has been advised by the depository that as of 5 p.m. EST on Monday, December 15, approximately 10,616,398 shares of common stock, 13,038 shares of convertible preference stock and 20,027 shares of 7 percent second preferred stock of Celanese had been validly tendered. The numbers assume conversion of all convertible debentures submitted for conversion.

These include 1,511,593 shares of common stock, 122 shares of convertible preference stock and 185 shares of 7 percent second preferred stock tendered pursuant to notices of guaranteed delivery.

By notice dated November 17, Celanese has called for redemption on December 18 all of its outstanding 4 percent convertible subordinated debentures due 1990.

Who's making news in fatty acids and glycerine?

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OILS, FATS & WAXES

Coconut Oil Prices Advance, But Buyers Keep to Sidelines

Consumption of coconut oil in the US is falling as consistently high price levels are keeping consumers away from the market. Instead, buyers are turning increasingly to less expensive competing oils, particularly soybean and palm.

The lack of interest in coconut oil has now gotten to the point where some buyers are beginning to sell off their forward positions in favor of the more cheaply priced oils, according to an industry source.

"I don't know how widespread the re-selling is at this point," says the source, "but it's clear that buyers are staying away from coconut oil." He says that there are some applications that people are still buying for, but he points to a lack of volume in new business in the market.

The price had been expected to ease off by this time, but some traders were instead surprised to see it hold at these levels. It had been thought that the approach of the holiday season in the Philippines would prompt originators to soften their prices in order to finish the year's selling before upcoming holiday time off.

Many market observers expected this to occur if buyers did not come back into the market. Instead, prices have remained strong, even in the face of low consumer interest.

The market experienced some strengthening last week after a spate of trading in Europe. Most of the buying and selling was in the form of dealer-to-dealer paper trading, according to industry sources. "There was a great amount of trading, but enough to bring the price up," says a trader.

OTHER FIRING INFLUENCES
Also acting as a firming influence in the market to the last couple of weeks were reports that an origin dealer/product was having difficulty covering his sales.

Speculation on the extent of the difficulty was said to be exerting upward pressure on the price, although, according to one source, the problem has been resolved by the rescheduling of shipment dates.

The unwillingness of consumers to buy coconut oil is heightened by the plentiful supply. Stocks in the US as of November 1 were 115,000 metric tons, down slightly from the previous month's figure of 139,700 tons, according to Bureau of Census statistics.

Both of these supply figures are up significantly from those of the previous year. As of November 1, 1985 US coconut oil stocks were 11,900 tons, at the beginning of October stocks stood at 59,000 tons. The difference between the figures is attributed to increased

production in the Philippines this year.

Current coconut oil stocks in the US should be sufficient to carry through the first quarter of 1987, according to a trader.

In the meantime, very few new orders for coconut oil are being placed, sources say, and competing soybean and palm oils are priced as much as 5 cents per pound cheaper in the US than coconut oil, making it appear un-

PRICES TRENDLINES

WEEK ENDING DEC. 19, 1986

CHANGES/UP

Corn oil, Midwest, 1c. per pound
Lard, loose, bulk tanks, Chicago divd, 1/2c. per lb.
Tallow, inedible, bleach, tanks, divd, NY, 1/2c. per lb.

CHANGES/DOWN

Coconut oil, NY, 1/2c. per lb.
Cottonseed, 41% bulk, Memphis, \$5 per ton
Peanut oil, Southeast (restricted), 1/2c. per lb.
Soybean, 44% bulk, Decatur, \$10 per ton
Soybean oil, Decatur, 3/4c. per lb.

OILS, FATS INDEX

The Oils, Fats & Waxes Index reflects the prices of 11 representative materials in this sector and the quantity of each produced in 1985.

Dec. 19, 1986 80.00
Dec. 12, 1986 79.50
Nov. 21, 1986 80.47
Dec. 20, 1985 80.88

Chemical Prices Start on Page 28

likely that consumer interest will be making a big comeback in the near future.

VEGETABLE OILS

LINSEED OIL — A seasonal slowdown has the linseed oil market looking forward to increased activity in the upcoming year. The price is currently holding steady at 25c. per pound in bulk, f.o.b. from Minnesota.

The market is very quiet because of the slackening production of oil-based paints. Some of the seasonal loss in business had been picked up by printing and hardboard users, but a source says that is grinding down as well. "A lot of plants close for the holiday," he says. "After the first of the year they start getting up and increasing their inventories."

The new year is also expected to usher in a high crushing rate with the increased production of oil-based paints. Sources note that the delayed harvest earlier this year had no lasting effect. Most of the flaxseed is in processor or company hands and won't be marketed until after January 1st.

SAFFLOWERSEED OIL — The safflowerseed oil market is still recovering from the heavy rainfall which caused premature sprouting of at least 50 percent of the Montana crop.

As a result of early sprouting, there has been less yield with a poorer grade of oil produced. There have been some complaints about the dark shade of the oil, a typical result of the damage done to the seed. The problem is particularly difficult for paint and varnish producers who need a lighter color to blend with their formulas.

The price of the oil is expected to increase as the supply diminishes, leading some suppliers to hold onto their materials.

A source in North Dakota reports that 15 percent of the safflowerseed crop there was damaged from rains.

The current price of safflowerseed oil in non-breakable tanks in New York is 80c. per pound and 78c. to 80c. per pound for edible material in drums, New York delivered.

SOYBEAN OIL — Exorbitant crushing

FRIDAY SPOT PRICES

MARKET CLOSE DEC. 19, 1986

CRUDE VEGETABLE OILS

Corn oil, NY lb. 20 1/2
Corn oil, Pacific lb. NA
Corn oil, Midwest lb. 22 1/2
Cottonseed oil, Valley lb. 18
Cottonseed oil, Minneapolis lb. 25
Peanut oil, NY lb. 16
Peanut oil, Southeast (restricted) lb. 25 1/2
Soybean oil, Decatur lb. 14 1/2

REF. VEGETABLE OILS

Corn oil, L.W., NY lb. 28
Corn, refined tanks lb. 30 1/2
Cottonseed oil, Jumbo tanks, NY lb. 27 1/2
Peanut oil, Jumbo tanks, NY lb. 31 1/2
Soybean oil, NY lb. 19 1/2

OLINEALS

Cottonseed, 14% bulk, Memphis ton \$180
Cottonseed, restricted, 34% bulk, Fargo ton \$110
Peanut, 80% bulk, SE, Alabama ton \$175
Soybean, unrefined, 44% bulk, Decatur ton \$147

FATS & GREASES

Lard, white, choice, tanks, divd, NY lb. 13
Lard, yellow, maximum 10% fat tanks lb. 11 1/2
Tallow, inedible, bleach, tanks, divd, NY lb. 14 1/2
Tallow, inedible, bleach, tanks, divd, NY lb. 14 1/2
Tallow, inedible, bleach, tanks, divd, NY lb. 14 1/2

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OILS, FATS & WAXES

rates have caused an excess of soybean oil, bringing a downward trend in the market. A comparison of the crushing rates in November 1985 (82.8 million bushels) to those of November 1986 (95.1 million bushels) shows an increase of 12.3 million bushels. Late last week the Chicago Board of Trade reported a price close to 14 1/2¢ per pound.

The extensive crushing is due largely to a high demand for meal, which is causing an abundance of oil to flood the market. "We had

low stocks in September and now we are producing far more than we need," says a source.

The lack of buying from India has contributed to the downward trend. Since their crop is in season they have not been importing rapeseed. Recently, however, they did buy some rapeseed from Canada and some palm oil from Southeast Asia, causing prices to rise.

Current export demand is largely met by cheaper oils coming out of Malaysia. "We have a residual supply of vegetable oils," notes an industry source, "we can't compete in the world market."

The future of the soy oil market is uncertain at this point. "If the Malaysian crop is small, as it has been rumored, the price could go up," says a source.

WAXES

MONTAN WAX — The price of crude montan wax imported from Germany is quoted between 56 1/2¢ and 82¢ per pound and is holding steady. The Californian variety is also steady at 61¢ per pound for ship shipped by carload or truckload f.o.b. ship ping point.

According to a source, the demand for Californian montan wax is up 5 percent and holding steady. "We are optimistic that the upward trend will continue; there are good sales in the carbon industry."

CHEMICAL MARKETING REPORTER

Quickest Way
to Keep Current
on Chemical Costs

AROMATIC ORGANICS

TDI Price Advance Holding As Market Demand Picks Up

Producers of toluene diisocyanate say that healthy demand and reasonably low supplies give them confidence that the price hike will stick.

"The price increase is firm, and the market is tight," says one producer. There are no pre-buying activities, he asserts, because "material was not available."

Another producer observes, similarly, that pre-buying was allowed. Buyers were limited to taking 100 percent of their average quantity volume, he says and there has been "reluctance" to the price move.

A TDI purchaser in the foam industry concedes that "I think the increase will stick, but that we will pass it through." He attributes the likelihood of success to stronger demand than in the early months of the year when a similar price initiative failed.

Another foam industry source observes that the earlier price increase began to erode almost immediately, as major suppliers undercut each other's pricing. That has not been the case in the early weeks of this initiative, he notes.

Producers say that firm toluene costs, though not the major reason for their price increase, have provided some support. Falling toluene values were cited as contributing to the difficulty with raising prices earlier in the year.

COSTS REPORTED RISING

"More relevant matters," according to one producer, include "the cost to build and maintain a facility, environmental expenses associated with running a plant today, and the cost of energy necessary" to operate.

Producers say that, while domestic demand this year has only been about even with 1985, the second half of the year has been 3 to 4 percent higher than the first half.

The furniture and carpet underlay markets, which account for about 43 and 14 percent of TDI demand, respectively, are said to have been particularly strong since mid-year.

It is observed that this pickup in demand results from a high rate of housing finishes following heavy housing starts in the Spring. Brick business in the fourth quarter from the automotive industry is said to reflect year-end inventory adjustment patterns. The transportation market accounts for about 21 percent of consumption.

Producers say the industry has been operating at a fairly high rate for the year. Estimates range from 92 to 95 percent of effective capacity. "We've been running flat out, and inventory has probably gone down over the year," says one producer, noting that "some had any inventory" to sell off prior to the price move.

"Inventories are very low," agrees another producer, saying that "we are probably in for a fairly tight supply/demand situation" for the first six months of 1987 on account of overtime scheduled in the industry.

Olin Corporation says it will be down for six weeks to the Spring prior to its 30-million-pound-per-year debottlenecking at Lake Charles, La., which should be in place by June.

At least two other producers are expected to take maintenance downtime during the first half of the year. Dow Chemical USA says it does not have a turnaround planned.

Olin says that the new capacity should be absorbed into the marketplace. A company spokesman points out that, with the expansion in the industry in recent years, capacity will still be lower than during 1984.

Industry supply will be greater in the second half of 1987, he says, but demand should pick up seasonally as it has this year.

Another producer comments that, while it is not easy to predict the swings in the housing market, "I believe the continued drop in home mortgage rates will keep the housing market alive" into 1987. In addition, he says, "if you take into account all the refinanc-

ing going on in home mortgages, home furnishings and housing-related demand could be healthy next year.

TDI exports have been running at a strong clip this year, edging last year's rate by 16 percent, and moving at fairly high prices, producers say. Major markets are Canada, Brazil, the Dominican Republic, Germany, and China.

It is noted that Brazil plans to increase its own production capabilities by mid-1988.

PRICES TRENDLINES

WEEK ENDING DEC. 19, 1986

CHANGES/UP

None

CHANGES/DOWN

None

AROMATICS INDEX

The Aromatic Organics Index reflects the prices of 14 representative materials in this sector and the quantity of each produced in 1985.

Dec. 19, 1986 187.84
 Dec. 12, 1986 187.84
 Nov. 21, 1986 187.84
 Dec. 20, 1985 187.84

Chemical Prices Start on Page 28

through a debottlenecking project. This will cut US trade to Brazil in half, resulting in a loss of 14 million pounds per year of exports, says a producer.

ALKYLPHENOLS — Schenectady Chemicals, Inc. says it is raising market pricing on nonylphenol by 1 1/2¢ per pound, effective January 15. Present market prices are said to be in the upper-30¢-per-pound range.

At the same time, market pricing on butylphenol will increase by 2¢ per pound, and on octylphenol by 1 1/2¢ per pound.

The company attributes the changes to a scheduled industry-wide 3¢-per-pound phenol price hike January 1. "It appears the erosion in phenol has stopped, and that we are on an upward trend," says a company spokesman.

BISPHENOL-A — Aristech Chemicals Corporation and Dow Chemical USA say they are raising selling prices by 2¢ per pound, effective January 1. Dow attributes the price move primarily to higher phenol costs.

Dow says it is continuing to invest money in the bisphenol-A business. The company plans to introduce a granulated form to the market in the first quarter of 1987.

BTX — Major benzene producers, including Exxon Chemical Americas and Shell Chemical Company are raising contract pricing by 12¢ per gallon, to \$1.10 per gallon, effective January 1.

At that time, contract pricing for most producers will have increased 23¢ per gallon, since late November. Standard Oil Company has not yet announced a January 1 price.

The benzene spot market was quoted last week at \$1.07 per gallon, a 7¢-per-gallon rise from the previous week. "There is a perceived shortage of benzene," says one industry source, that stems from production problems experienced by major producers and strong derivatives demand.

"Nobody anticipated this," dramatic surge in pricing this month, says another source, but "there is not a lot of benzene around, and people want it."

It is observed that, while hydroalkylation capacity has started up recently to meet the industry's needs, "it is a function of weeks and months" before large quantities of that material become available to the market.

Spot thiophene pricing was quoted last week at 78¢ per gallon, a 5¢-per-gallon increase

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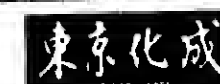
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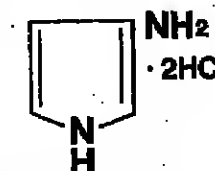
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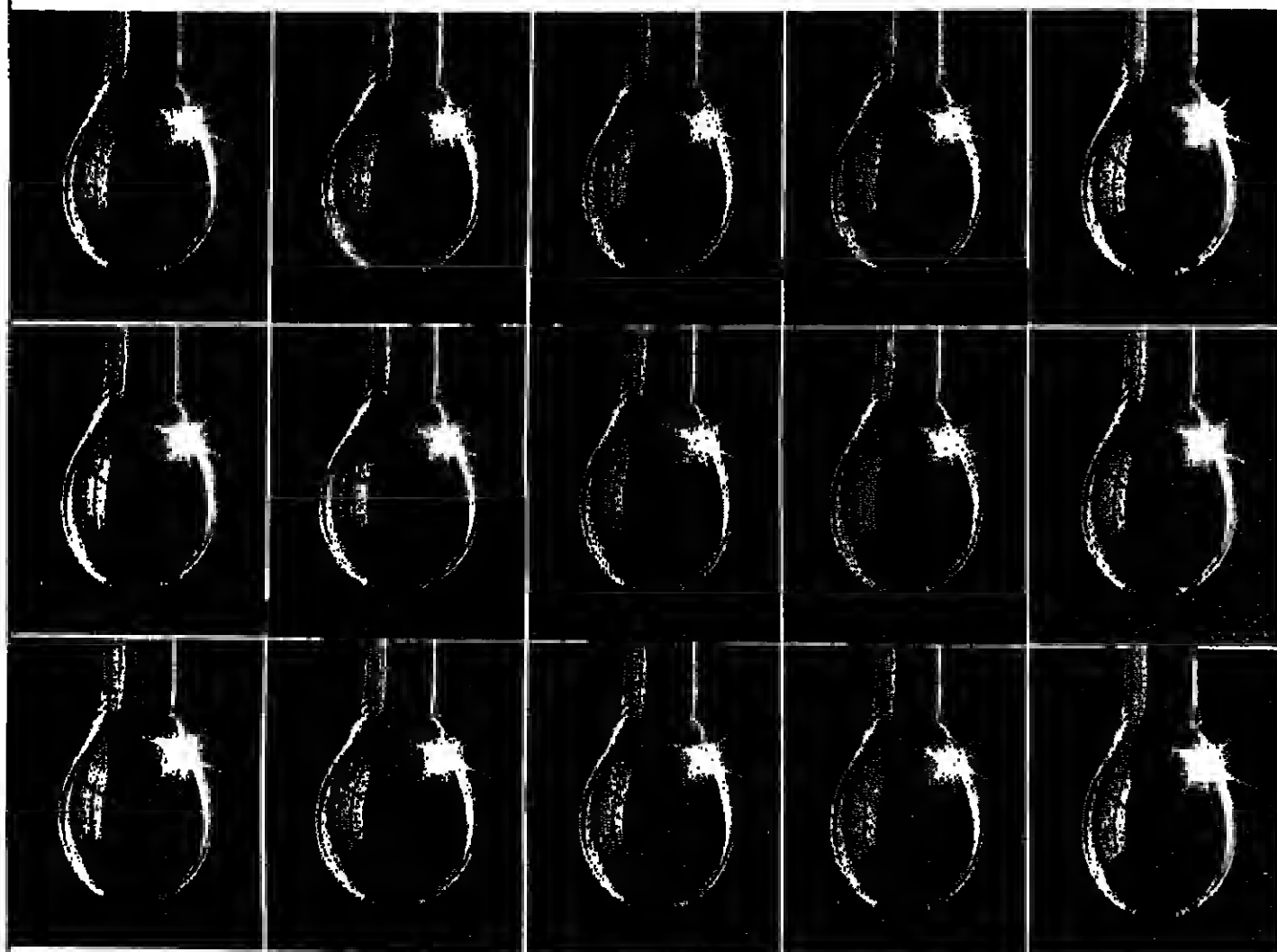
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CHEMICAL MARKETING REPORTER

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AROMATICS

from the week before, reportedly fueled the benzene movement.

Xylene was holding steady on the spot market between 78c. and 80c. per gallon. The contract level this month is said to be between 76 1/2c. and 77c. per gallon.

NAPHTHALENE — A producer reports market price of 20c. per pound for material. List pricing in the industry is said to be slightly higher.

The market is described as mature and stable with, "if anything, slightly decreasing usage." Major end markets include dyes, mothballs, and surfactants.

PHTHALIC ANHYDRIDE — Aristech Chemicals Corporation says that, effective January 1, it will remove all competitive allowances on prices less than 26c. per pound for molten material, f.o.b. shipping point.

The company also will eliminate all competitive allowances on prices less than 26c. per pound for flake material, f.o.b. shipping point.

Aristech's list pricing will remain unchanged at 30 1/2c. per pound for molten material, f.o.b. shipping point, and 31 1/2c. per pound for flake, f.o.b. shipping point.

BASF Wyandotte Corporation says that, through contract renegotiations, it is eliminating off-schedule prices for the new year. BASF's list pricing will remain 27c. per pound on molten and 30c. per pound on flake, f.o.b. shipping point.

Another producer says that he has been making some upward adjustments in pricing of late, and one other producer says he will push any upward movement in pricing.

STYRENE — Producers are announcing higher prices for January. Arco Chemical Company says it is raising its pricing by 3c. per pound. The company's new list price is 30c. per pound.

Amoco Chemicals Company is increasing its list price to 30c. per pound less a 3c. discount temporary voluntary allowance from its previous price of 25c. per pound.

Borg-Warner Chemicals reportedly is moving its list price up to 32c. per pound, less a 4c. per-pound TVA from a level of 28c. per pound.

Chevron Chemical Company is raising its list price to 30c. per pound, with a 4c. per-pound TVA for major accounts.

Dow Chemical USA is increasing its list price to 30c. per pound with a 4c. per-pound TVA from a listing of 26c. per pound.

Flina Oil & Chemical Co. has a current posting of 30c.-per-pound, less a 4c.-per-pound TVA, and is evaluating the market for January.

Huntsman Chemical Corporation's December price has been 25c.-per-pound, less a 2c.-per-pound TVA.

Sterling Chemicals is increasing its list price to 30c. per pound from 28c. per pound. El Paso Products Co. is raising its list price to 28c. per pound.

Producers say the price changes are driven by surging benzene costs. A significant price increase is necessary "just to maintain margins," one producer comments. "Especially since December has been fairly flat" for styrene selling prices which are quoted as low as 23c. per pound.

ALIPHATIC ORGANICS

Vinyl Chloride Prices Firm As PVC Tabs, Costs Rise

Vinyl chloride monomer prices are expected to firm in the new year in response to rising raw material costs and higher prices for polyvinyl chloride. An extremely tight supply-demand balance for VCM is also contributing to higher prices, sources say.

In recent months, the greatest VCM price movement has been vinyl resin's selling price. For example, a successful 1-cent-per-pound PVC price increase launched in November pulled the price of VCM up one-half cent per pound to a range of 18 to 18 1/2c. per pound. Since November, a series of price moves have been taken by PVC producers to establish January resin prices at 1 cents per pound above November's prices. If these actions prove successful, VCM prices will advance a penny per pound in the new year, analysts say.

Rising VCM costs in 1987 is an expected \$10 per ton chlorine price increase, a widely anticipated push in ethylene prices. Many analysts queried say ethylene prices will try to break out of the pricing cage that has plagued the primary olefin, and will push for 2 cents per pound price increases in January.

While it appears doubtful that ethylene prices will rally the full 2 cents, the prospect of increasing costs for both feedstocks has been enough for merchant ethylene dichloride producers to ask for one cent price increases next month. Prices for EDC, the precursor to vinyl chloride monomer, currently are quoted at "just under 10 cents" by one seller.

After peaking at 17 cents per pound this year, vinyl chloride prices slipped to a 1980 low of 13 cents during the summer and have since slightly since then. Sources note that a recent firming trend in VCM prices has been entirely from PVC price hikes.

RAW MATERIAL INCREASES
Increases in raw material costs for VCM, ethylene dichloride, haven't affected monomer prices. A tight supply-demand balance for VCM all year has also had little impact on prices. Together, though, the combination of rising raw material costs and tight availability of the monomer gives producers added impetus to hike prices, observers say.

On an annualized basis, demand for VCM has been extremely close to capacity in 1986. Facing a slight trail off in monomer output in the fourth quarter, one producer says 1988 production of VCM will reach 8.375 billion pounds. This compares to a 1987 production of 8.4 billion pounds. This year's output shows a remarkable surge in VCM production in the past two years. Production in 1986 registered a 7.7 percent gain over 1985, and an 11.4 percent increase over 1984.

Furthermore, many analysts are projecting solid demand for domestic VCM markets in 1987. Most observers say the building industry will remain strong next year, and estimate call for PVC demand to match or better last year's consumption total.

To meet demand for PVC, VCM producers have adopted a plan of rerouting exports to the domestic market as needed, rather than using or reopening idled VCM capacity. One observer says this strategy will result in possible \$50 million pound decline in net VCM exports in 1987, from this year's 1.2 billion pound total.

The new, domestic VCM capacity will remain close to the current 8.4 billion pound capacity. Dow and Shell maintain large VCM units on the Gulf Coast, but none of the companies plan to reopen capacity at this time. Occidental Chemical, the largest integrated PVC maker in the country, recently said that, while it frequently evaluates the need to build a VCM plant at this time, it produces ethylene, chlorine, ethylene dichloride and PVC, but not VCM.

As a result, VCM supply figures to be in tight balance through next year, particularly early in the year, when demand for monomer is at its peak. One source summarized market conditions by saying PVC producers "like it when VCM is tight, because it gives more support to the PVC market. That's why Oxy hasn't gotten its own supply of VCM."

ANTIFREEZE — Citing increased costs for production, distribution, and marketing, First Brands Corporation has announced a price increase of 25c. per gallon on antifreeze.

PRICES TRENDLINES

WEEK ENDING DEC. 19, 1986

CHANGES/UP

None

CHANGES/DOWN

None

ALIPHATICS INDEX

The Aliphatic Organics Index reflects the prices of 20 representative materials in this sector and the quantity of each produced in 1985.

| | |
|---------------|--------|
| Dec. 19, 1986 | 222.80 |
| Dec. 12, 1986 | 222.80 |
| Nov. 21, 1986 | 222.80 |
| Dec. 20, 1985 | 222.80 |

Chemical Prices Start on Page 28

products effective with shipments on February 1, 1987. Included in this increase are PRESTONE II, private label product and bulk antifreeze.

BUTADIENE — The December market price for butadiene has made a notable increase over the levels seen a month ago. Analysts are currently placing prices in a range of 11c. to 12c. per pound. The increase is generally attributed to the progressive tightening seen in supply of the olefin, contributed to largely by the lack of imports into the US.

European producers reduced their exports, seeing it as uneconomical to export at the low price levels seen recently in the US, which bottomed out at 9c. per pound during November (CMR, 12/1/86, pg. 18).

Instead, European producers are said to be co-cracking at a growing rate, currently at about 30,000 tons per month, according to an industry analyst.

Also contributing to the tightness in supply is the fact that US producers are relying more and more on propylene as a feedstock, which yields less butadiene than heavier feedstocks.

Current inventory levels stand at 137 million pounds as of the first of December, down from November's beginning stocks of 159 million pounds, according to Tucker Consulting Services of Dawey, Okla. "The inventories are probably at their lowest in two years," says one analyst, who goes on to say that this is creating a situation conducive to the increase in price seen in the market this month.

Although US steam crackers are running at high capacity, "We never make as much as we consume," says an analyst, who speculates that the strengthening in pricing here may begin to attract European exporters back to the US market.

POLYOLS — Olin Corporation has announced that it will increase its prices for "Poly-G" non-foam and rigid polyols by 3c. per pound. The price change is effective January 1, 1987 for non-contract customers and, for contract customers, on the first date permitted by the contract. Price changes are not to exceed current published list prices; all other terms of sale, including payment, remain unchanged.

The price increase follows an Olin increase one week earlier on flexible polyols. Moberg Chemical Corporation and Dow Chemical also raised prices on both rigid and flexible polyols. The main reason for the increases is

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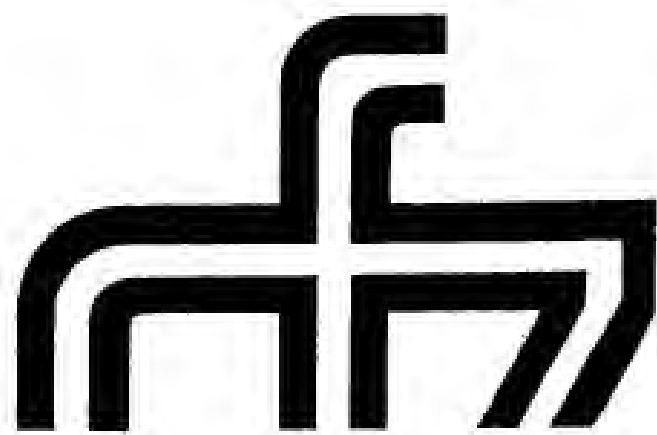
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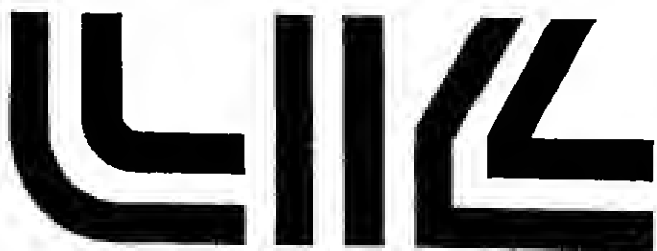
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16

CHEMICAL MARKETING REPORTER

December 22, 1986

ALIPHATICS

said to be the rising price of propylene oxide, the primary raw material in polyol production.

PROPYLENE GLYCOL — Olin Corporation has announced an increase in its off-list pricing for its propylene glycol products. The price increase is to be effective January 1, 1987 for spot customers and according to terms for contract customers.

The price increase will be 2c. per pound, not to exceed current list prices, for industrial, USP, feed, dipropylene and polychill grades. Prices for the propylene glycols are f.o.b. Brandenburg, Ky. Olin's current list pricing for bulk material is as follows: 41c. per pound for industrial grade; 43c. per pound for feed grade; 44c. per pound for USP grade; 44 1/2c. per pound for polychill; and 40 1/2c. per pound for dipropylene.

This price change comes on the heels of a similar announcement by Dow Chemical USA, which also raised prices by 2c. per pound for its propylene glycol products.

The strengthening seen in the market lately is said to be the result of producers trying to regain some of the position lost earlier to large quantities of imports that came into the US in 1984 and 1985. This year,

though, imports have dropped off largely to changes in the value of the dollar and the D-mark, says an industry spokesman. "We're looking for a modest recovery rather than total recovery of the price that had been lost," says an industry spokesman for contract customers.

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DRUGS & FINE CHEMICALS

Fructose Field

Continued from Page 7

president of Reach Associates, a research firm, said recently on the occasion of the October 1986 sweetener symposium in Brussels, Belgium: "Fructose implies fruit and health, whereas sucrose has been written off as the use of sucrose."

There's general agreement in the industry that fructose is a more healthful product, especially for individuals with blood sugar problems such as diabetes or hypoglycemia. It is metabolized along different pathways from those for sucrose, it does not create the metabolic sugar highs and lows associated with the metabolism of sucrose.

As a pure form fructose is a white crystalline substance, sweeter than sucrose. Under certain circumstances it functions as a preservative; for instance, in combination with ascorbic acid. This flavor-enhancing aspect may be appealing to the food industry.

Problems for the product may arise from the fact that fructose tends to pick up water and is exposed to the atmosphere. But, as one manufacturer points out, the water-attracting quality may turn out to be a benefit in certain applications. In the case of baked goods, fructose's ability to hold water may prevent certain products from going stale.

Sugar's only domestic competitor is Xylofin. This company manufactures fructose from dextrose solution at its plant in Thomson, Ill. In the American Xylofin process, dextrose is exposed to specific enzymes, and the resulting dextranase mixture is separated by means of chromatography. The remaining dextrose is recycled for further conversion into fructose.

XYLOFIN JOINT VENTURE — Originally, American Xylofin was a joint venture of Finnish Sugar Company in Helsinki, Finland, and F. Hoffmann-La Roche of Switzerland. Hoffmann-La Roche, a New Jersey-based pharmaceutical company, has been in charge of US operations for the product. Beginning January 1, 1987, however, Finnsugar Bioclimics, a subsidiary of Finnsugar, Ill., a part of the Sugar Company, will assume complete responsibility for the sales of Xylofin's fructose.

According to a Roche spokesman, the company will continue to supply its customers with fructose for the balance of 1986 and 1987, working closely with Finnsugar to ensure a smooth transition.

Finnsugar recently changed its name from Finnsugar Bioclimics, a firm specializing in enzymes. George Harkins, head of specialty sweeteners at Finnsugar, stresses his company's determination to stay in the fructose market. "We will meet the competition," he says, adding "we have been at this for a long time and we will stay in it."

There's general agreement in the industry that these are interesting times for fructose. "It is felt that the food industry will be willing to look at fructose as an alternative to sucrose."

In the present, fructose application has been somewhat limited by specialized uses in pharmaceutical areas and in the health food industry. "If prices can be brought down," one source says, "the common folk are willing to look at it."

Another source says, "fructose will command a premium over sucrose." At present, sucrose sells for 30 to 31 cents per pound. For 1985 the US consumption of sucrose is estimated at 14.8 billion pounds, a decline from a decade ago.

The fact that fructose is sweeter than sucrose in many applications comes into play, and the same sweetness can be achieved with less product, on a pound for pound basis. One source puts it: "the sugar industry is looking at fructose."

One source also points out that the chocolate industry, termed as "one of the last bastions of sucrose," might be willing to consider fructose. If indeed the prices come down to

the levels indicated by Staley. Over the last three years, foreign imports of fructose have been growing steadily, despite an import tariff of over 15 percent. Japan especially has made considerable gains. In 1984 it brought a little over 500,000 pounds into the US; by 1985 the figure had grown to almost 2 million pounds.

To date this year, Japanese imports of fructose have exceeded the 2-million-pound mark. Other major importers are West Germany, which cut its imports from over 2 million pounds in 1984 to slightly over 1 million in 1985.

PRICES TRENDLINES

WEEK ENDING DEC. 19, 1986

CHANGES/UP

None

CHANGES/DOWN

None

DRUGS INDEX

The Drugs & Fine Chemicals Index reflects the prices of 10 representative materials in this sector and the quantity of each produced in 1985.

| | |
|---------------|--------|
| Dec. 19, 1986 | 211.16 |
| Dec. 12, 1986 | 211.16 |
| Nov. 21, 1986 | 211.16 |
| Dec. 20, 1985 | 211.16 |

Chemical Prices Start on Page 28

In 1985 and 1986, France imported 142,000 pounds in 1984, the figure grew to more than 1 million in 1985 and in 1986.

As one producer notes, foreign importers may find the US market a more difficult place to do business than in the past.

BARIUM CHLORIDE — Producers of high-purity barium chloride see a steady market for the coming year. A spokesman for J.T. Baker Company agrees, saying that their prices have not changed for some time. The company charges \$1.50 per pound for a technical grade and \$5.50 per pound for the reagent-grade material.

A spokesman for G. Frederick Smith, makers of ACS purity grade, used for analytical applications, reports prices ranging from \$5.02 per kilo to \$8.80 per kilo. There have been no price changes for more than one year.

"The market has been steady over the past several years," says a spokesman for Chemi-Products Corporation, Cartersville, Ga., the only US manufacturer of industrial-use barium chloride. "It is a mature market," says the representative adding that he foresees no price changes for the coming year. Prices reportedly dropped several years ago, due to the impact of Chinese imports on the market. There is agreement among industry sources that the market has been depressed ever since.

Prices are as follows: For the crystalline product, \$23.50 per hundred pounds, delivered, in 50-pound bags; for the anhydrous variety, \$29.50 per hundred pounds, delivered, in 500 pound drums.

Some uses for barium chloride are as pigment and color in the textile industry, for black-fine paper coating, and in the tanning industry.

NORFLOXACIN — Merck Sharp & Dohme announced the marketing of a new anti-bacterial agent, "Noroxin," (norfloxacin) indicated for the treatment of urinary tract infections.

Noroxin is said to belong to a new class of anti-bacterial agents called fluorquinolones with a broad spectrum of effectiveness and fewer side effects than commonly prescribed antibiotics. According to MSD, the product is the first agent available specifically for urinary tract infections.

Other drugs for the treatment of these diseases include trimethoprim/sulfamethoxazole, an antibiotic marketed by Roche as "Bactrim," and by Burroughs Wellcome Company as "Septra."

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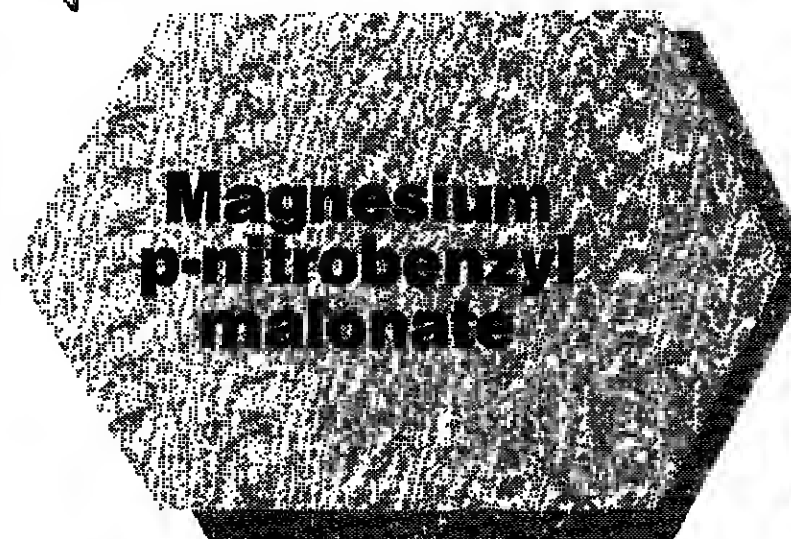
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CHEMICAL MARKETING REPORTER

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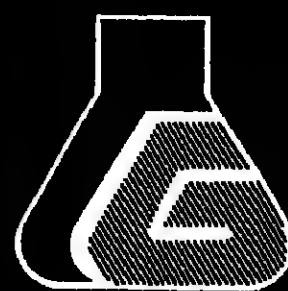


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Drug Patent Bill Is Defended By Canadians

Canadian drug prices will not rise as a result of amendments to the Drug Patent Act and critics are irresponsible when they suggest prices will climb because of proposals to give patent protection to pharmaceutical manufacturers, says a Canadian government official.

"Nothing we are doing will cause the rise in price of an existing drug or, for that matter, a future drug," Consumer Affairs Minister Harvie Andre told a hearing of the House of Commons in Ottawa last week.

But Mr. Andre acknowledged that the proposed amendments would delay the decline in drug prices that is caused by competition with generic copies of brand-name drugs.

"There is no question that generic competition causes the price to come down," he said, noting that the bill would delay the introduction of generic competition for seven to 10 years. "This can be called potentially delayed savings."

The legislation under consideration would guarantee a drug manufacturer exclusive patent rights for seven years against a generic manufacturer who develops a copy in Canada, and for 10 years against a generic drug whose chemical components are imported.

It would also provide the provinces \$100 million to compensate them for delays in introducing approximately 40 generic drugs to the market.

The bill would also set up a Drug Prices Review Board for the purpose of protecting consumers from unjustified price increases.

Mr. Andre declared that the legislation would produce an increase of \$1.4 billion in research and development in Canada, based on a 13 percent growth rate in the Canadian drug market, and would directly create some 3,000 new jobs by 1995.

He also contended that the proposal would end an unfair system of permitting generic copies. "We will no longer be taking a free ride at the expense of the rest of the world," Mr. Andre remarked.

"Whether you develop a new camera, a new mousetrap or a new drug, you're entitled to some period of exclusivity," he said.

Mr. Andre also pointed out that new drugs

often reduce health-care costs because they reduce hospitalization. The older drug "Tygamol" had \$85 million a year in sales but saved \$135 million a year in hospitalization costs, he noted.

Mr. Andre told the committee the government had rejected a four-year patent law proposed by a commission inquiry, because "four years just isn't enough," and this together with increased efforts to clean up old toxic dumps under the new law will push the market for solid, liquid and chemical wastes from \$6.8 billion in 1983 to \$11.8 billion in 1992.

EPA May Ban Liquid Disposal

Environmental Protection Agency is proposing a general ban on the disposal of containerized hazardous liquids in landfills.

The agency says such a ban would prevent the presence of free-flow liquids in the landfills, thus reducing the risk of groundwater contamination from free-flowing liquids which are likely to be released as liquids drain down and collapse.

Drum collapse could also trigger eventual collapse of the landfill cover after the hazardous waste has been closed. Some limited exemptions to the prohibition would apply, EPA says.

The agency is also proposing to prohibit the use of biodegradable materials used to absorb containerized liquids. In addition, EPA is proposing to require the use of liquids-release test to determine whether waste/absorbent mixture will release liquid under pressures routinely encountered within landfills.

EPA banned the disposal of bulk liquids in hazardous-waste landfills in May 1985. The agency will accept comments on the proposal for 60 days following publication in the Federal Register next year.

Bioassay Lab Sale Fails to Go Through

Bioassay Systems Corporation says the US Biogenics, Inc. terminated the agreement to purchase for \$250,000 the assets of Bioassay's Woburn toxicology facility.

Bioassay is not negotiating with any other potential purchaser for the Woburn facility, which performs mostly government contracted toxicology work, primarily for the National Toxicology Program.

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Toxic Waste Spurring

Continued from Page 5

and acquisitions around throughout the country.

EPA reports that stricter enforcement of laws and regulations will force generators of wastes to turn to third parties for disposal and this together with increased efforts to clean up old toxic dumps under the new law will push the market for solid, liquid and chemical wastes from \$6.8 billion in 1983 to \$11.8 billion in 1992.

Trends that caused the private sector to increase its spending in this sector from \$1.1 billion in 1983 to \$8.9 billion in 1986 will continue for at least the next five years.

The total market for all types of air pollution abatement equipment increased from \$1.1 billion in 1983 to \$1.8 billion in 1988. The market is currently moving to meet much more air pollution control laws, particularly directed at public utilities, and this will help spur total sales to \$2.6 billion by 1992.

This segment is dominated by major suppliers: General Electric, Combustion Engineering and McDermott claimed a 56 percent combined market share in 1988 and is based on only a few key industries (fully 32 percent of 1986 sales went to the petroleum and chemical product industries).

The market for water pollution abatement

is by far the slowest growing segment in the hazardous waste industry, due to low or negative rates of growth in the construction of new treatment facilities, the company says.

However, for the next five to ten years, the market will be driven by a scarcity of quality water sources, and this provides an opportunity for producers of water-treatment chemicals, who should see their market expand from \$2.1 billion in 1988 to \$2.7 billion in 1992.

Disposing of nuclear waste is a problem of growing magnitude, and a political issue with which no one is dealing effectively. Congress has recently put off addressing the problem until the mid-1990's.

While there is national pressure to enforce control of radioactive wastes, local communities are against the location of a waste storage site near them, or transportation of hazardous wastes across their areas to disposal sites.

Total costs for processing, packaging, transportation, and disposal amounted to \$312 million in 1986, and the market research firm predicts the figure will grow to \$490 million by 1992.

Despite the strong predictions of future growth, many companies that entered the hazardous waste management industry during the 1970's, anticipating considerable growth in product demand, have thus far been disappointed that legislative goals have not been met by regulatory measures.

Profitability problems which were endemic in the early days of the industry have for the most part been alleviated by better technology, better management, and industry concentration. However, disagreement still exists over how much, and how fast pollution should be abated, and this continues to cause regulatory indecision and inconsistency.

Chloralkali Unit

Continued from Page 5

mands as the reason behind the decision to increase production.

"Our ongoing commitment is to ensure that OxyChem will be able to meet the product needs of the customers we serve. This particular project is one way we will be able to demonstrate that commitment," comments Mr. Mears.

In addition to chlorine and caustic soda, the Taft plant produces sulfur monochloride, sodium chlorate and thionyl chloride.

Earlier this year, the corporation completed the installation of advanced technology membrane cells at the plant, an investment which it claims strengthened its position "as one of the lowest cost producers" of commodity chloralkali products in the United States.

The company also produces chlorine and caustic soda at eight other US plants, including its Convent, La., facility.

Occidental Chemical Corporation which manages the chemical operations of Occidental Petroleum Corporation, claims to be the largest chlor-alkali merchant marketer in North America. Before Occidental acquired Diamond Shamrock's facilities PPG was generally considered the largest chloralkali merchant marketer.

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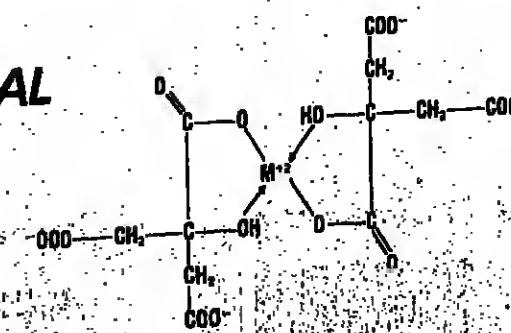
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Chemical Finance

FMC Files Insider Trading Suit

FMC Corporation has filed a lawsuit against, among others, Iva F. Bosky and various Bosky companies; David S. Brown and Goldman, Sachs & Co.; Ira B. Sokolow and Shearson Lehman Brothers Inc.; and Dennis B. Levine and Drexel Burnham Lambert Inc. The suit alleges insider trading and misuse of information relating to FMC's \$2 billion recapitalization, completed earlier this year.

The lawsuit, filed in the US district court, northern district of Illinois, seeks damages in excess of \$280 million for violations of Federal securities laws and civil violations of the Racketeer Influenced and Corrupt Organizations (RICO) Act, as well as violations of common law.

Commenting on the action, FMC chairman and chief executive, Robert H. Maloff, said the free-market system has been "jeopardized by Wall Street players caught in the grip of takeover fever and get-rich-quick schemes," and added that FMC will "aggressively seek appropriate restitution."

In its complaint, FMC seeks recovery of the \$975,000 profit made by Mr. Bosky on his February 21 sale of FMC stock; recovery of the \$17.5 million fee paid by FMC to Goldman, Sachs; recovery of profits of third parties who benefited from insider trading of FMC stock, which includes approximately \$20 million in additional profits accrued by Mr. Bosky; and \$225 million in damages based on the increased cost of its recapitalization.

BP Buys Advanced Composites Unit

British Petroleum Company and Owens-Corning Fiberglass Corporation have signed an agreement under which BP will acquire the Hiteco subsidiary of Owens-Corning's aerospace and strategic materials group for \$240 million in cash. The transaction is expected to be completed in January, subject to Hart-Scott-Rodino and the usual closing conditions.

Owens-Corning is selling the businesses which make up the aerospace and strategic materials group as part of a previously announced restructuring and recapitalization plan. The group was acquired from Armco, Inc. in September 1985 for \$418 million. Owens-Corning had previously sold three of the group's units. Those remaining to be sold are Ladish Company and Oremet.

BP will effect the transaction through Bristol Composite Materials, Inc., a wholly-owned subsidiary of BP North America, Inc. and part of the BP advanced composites business.

Hiteco, based in Newport Beach, Calif., claims a significant presence in the US advanced composites industry with sales of \$150 million in 1985.

Rorer Keeping Armour Subsidiary

Rorer Group, Inc. will keep Armour Pharmaceutical Company. The company had announced its intention in July to consider divesting Armour with the primary objective of obtaining prescription or consumer pharmaceutical product lines in exchange.

Rorer chairman and chief executive officer, Robert E. Cawthorn, says the company received "several good offers," but that they did not include a "suitable" product exchange. Meanwhile, Armour has a number of new products under development, including a highly-regarded monoclonal antibody product for treatment of hemophilia.

Armour Pharmaceutical, previously a subsidiary of the Revlon health-care group, was acquired a year ago and had worldwide sales of approximately \$180 million in 1985. The company ranks fifteenth in terms of sales among companies serving hospitals in the US pharmaceutical market.

Alcoa Buys Stake in Separations Firm

Aluminum Company of America has purchased a majority interest in Universal Adsorbents, Inc., Atlanta, Ga.-based specialists in chromatography products used in purification processes for the pharmaceutical and biotechnology industries. Terms of the purchase were not disclosed.

UAI will operate as part of Alcoa's separations technology division formed early in 1988. A new plant will be built in Atlanta to broaden UAI's line of chromatographic aluminas and silicas.

Alcoa expects 1987 sales for its separations technology division, which also includes units utilizing ion exchange, filtering and membrane technologies, adsorbents and specialty materials for the petrochemical and catalyst industries and a waste and water treatment company, to exceed \$120 million.

Koppers Authorizes Buy-Back

Koppers Company says its board of directors has authorized purchase of up to 45 million shares, or 15 percent of the company's outstanding common stock, as part of a restructuring plan in progress since the end of 1985.

The company currently has about 29.9 million shares outstanding and says it will purchase in the open market or otherwise, including on odd-lot buy-back offer to holders of less than 100 shares.

Charles R. Pullin, Koppers' chairman, says the company has "achieved most of our goal of divesting 10 businesses in 1988." More important, he says the company will have more funds for redeployment than originally anticipated.

Asset sales were expected to generate \$160 million for use in entering new operations related to existing core businesses and to redeem or purchase stock.

Koppers has acquired two companies with annual sales of \$80 million in the construction materials and services business and formed an equally-owned joint venture with annual sales of nearly \$200 million in 1988.

Chemical Financial Briefs

Allied-Signal Inc. is in active negotiations to sell its 15.8 percent stake in Healey Group back to the company. The sale, for about \$450 million, is expected to be completed next month.

Directors of Burrill Chemical, Inc. have authorized the company to make an offer to purchase up to 84,497 shares of its common stock held by shareholders other than A.A. Burrill, Jr., chairman, and Gerald L. Wheatley, president, and members of their immediate families. The price of offer will be \$75 per share.

Ethyl Corporation, has acquired 13.8 percent of the common stock of Nelson Research & Development Company, Irvine, Calif., and Nelson's board of directors was expected to activate last week on a proposal by Ethyl to acquire the remaining shares. Ethyl bought 1,270,000 shares of the company's common stock through a wholly owned subsidiary in a privately negotiated transaction. The price was not disclosed.

GAF Corporation has acquired 2,148,700 shares of CBI Industries, Inc. common stock, representing approximately 9.9 percent of that company's outstanding shares, at an average cost of \$28.21 per share. GAF is filing a Schedule 13D with SEC and intends to file under Hart-Scott-Rodino to permit the company to purchase over 10 percent but under 25 percent of CBI shares. CBI, based in Oak Brook, Ill., owns industrial gas maker, Liquid Carbonics Industries Corporation, which contributes one-third of revenues.

COATINGS & PLASTICS

Carbon Black Producers Push For Higher Prices this January

Higher raw material costs and lower selling prices have had a significant impact on carbon black margins this quarter. Responding to a 25 percent increase in carbon black oil costs, producers of the pigment intend to raise furnace black selling prices in January, a move which should help restore some health to the anervated market.

Columbian Chemicals Company was the first producer to call for higher selling prices two weeks ago, when it announced a 7 to 8 percent increase in carbon black selling prices to take effect January 5.

Last week, Ashland Chemical Company, IN Heber Corporation, Cabot Corporation and Richardson Inc. followed with 1-cent-per-pound increases for January 15.

These increases will bring selling prices for N-500, N-289 and N-700 grades to \$1.25 cents per pound, 25 cents per pound and 21 cents per pound, respectively. Prices for Richardson's tread grade products N-10 and N-339 will be 23.25 cents per pound and 21 cents per pound.

Prices for the pigment followed oil for the last three quarters of 1986. Through March, a CBO price dropped from \$21.50 per barrel to \$16 per barrel, carbon black tabs fell a total of 1.25 cents per pound.

Between March and August, they slipped an additional 2.75 cents per pound; pigment prices were last officially changed in July, when producers cut selling prices by 1 cent per pound as CBO fell to a low of \$8.50 per barrel (CMR 8/4/88; page 26).

CBO COSTS UP
Over the fourth quarter, however, crude oil and CBO prices began to climb. In October and November, CBO values firmed a total of \$1 per barrel, bringing them back to second quarter levels of \$12.50 per barrel.

Despite this increase, carbon black producers were unable to pass along higher costs, and have been selling material at 10 to 15 percent discounts.

Imports of both finished rubber goods and carbon black pigment have weakened the US market considerably in the past four years. Although they still expect a negative trade balance, producers say that pigment imports are falling this year.

There has been no abatement of finished goods import levels however; increased passenger car imports are expected to stiffen the market growth this year. The importation account for more than 55 percent of the total annual output of carbon black. With tire exports up to around 35 million units this year, producers say demand should remain flat at last year's level.

PLASTICS MATERIALS

PHENOLIC RESINS — The Forest Products Division of Borden Chemical Company will raise prices for its phenolic resins on January 1, the company announced last week.

Prices for its 40 percent liquid grades will increase by 1c. per pound on that date; prices for other grades will vary depending on oil cost.

Borden's Industrial Phenolics Division had raised prices for industrial phenolic resins a previous week, moving prices for flake, powder and liquid grades up from 1c. per pound to 1.5c. per pound, depending on grade. The Specialty Resins led this price increase movement, announcing comparable price increases after phenol producers announced January increases (CMR, 12/8/88; page 8).

PRIME PIGMENTS

COPPER OXIDE — C.P. Chemicals Inc., a leading producer of cupric and cuprous oxides, is raising selling prices for its wood-treatment grades of black cupric oxide by 8c. per pound, immediately. The increase, the

first since last year, will bring the market price for truckload quantities of the oxide to 82c. per pound.

A spokesman for another leading producer indicated that his company also plans to raise selling prices for comparable product lines in January, but formal announcements have

PRICES TRENDLINES

WEEK ENDING DEC. 19, 1986

CHANGES/UP

None

CHANGES/DOWN

None

COATINGS INDEX

The Coatings & Plastics Index reflects the prices of 13 representative materials in this sector and the quantity of each produced in 1985.

Dec. 19, 1986 306.4
Dec. 11, 1986 308.4
Dec. 22, 1986 308.4
Dec. 20, 1985 308.4

Chemical Prices Start on Page 26

not yet been made, and an effective date has not been established. Remaining producers have not announced price moves.

Increased raw material costs are said to be driving this increase, along with heightened demand. Traditionally, most raw material metal has been derived from spent metal, a byproduct of printed circuitboard manufacturing. Last year, the number of circuitboards produced fell, lowering the amount of available spent material. Lower circuitboard production has continued this year, producers say. Although the fall in production is "not precipitous," says one, it has nevertheless forced them to turn to more expensive pure metal material. Currently, more than half of the total raw material metal is being drawn from pure metal stores. While inexpensive raw material stocks have decreased, demand for wood-treatment grades has risen sharply. Although it is not expected to sustain this growth, the market for this grade of product has seen 10 to 15 percent annual growth for the past 3 to 5 years.

The oxide is also used as a catalyst, an organic dye intermediate, and an additive in ceramic production.

IRON OXIDE — Last week, Mobay Corporation officially announced that it will raise prices for its "Bayferrox" synthetic iron oxide pigments by 3c. per pound on January 1.

New list prices for "Bayferrox" reds will range from 85c. per pound to 70c. per pound; those for "Bayferrox" yellow, from 84c. per pound to 87c. per pound. "Bayferrox" blends will sell for 88c. per pound.

Prices for the pigment were last increased in 1982, then lowered again in April, 1985.

So far, other domestic producers have not announced any price changes.

MISCELLANEOUS

ACTIVATED CARBON — American Norit raised prices for some of its "Darco" brand powdered activated carbon on December 1, the company announced last week. The price for its primary general purpose product, "Darco" S-51 is now 8c. per-pound higher, at 81c. per pound.

Increased manufacturing costs were cited as reasons for the increase. According to D.K. Colona, "Darco" sales manager, this is the first time prices for the product have been increased in over four years.

Calgon Carbon Corporation, another major producer of activated carbon, increased prices for its product lines in March by 2.5 to 3 percent, while the Ceca Division of Atochem Inc. raised prices a comparable amount in April.

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An index of weekly chemical market reports is on the back cover.

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| | | | |
|--|---------------------------------|----------|---------|
| Tube root, powder, 5% rotenone, basis | 50-lb. bgs., i.l. works | 1.60 | - |
| Cumene seed, bulk, contract, f.o.b. | lb. | 15 | 15 1/4 |
| Cumin seed, Indian, bgs. | lb. | 85 | - |
| Mustard, bulk, f.o.b. | lb. | 19 | - |
| Cyanuric acid, dms, c.l., tl. frt. | equivalent | 1.16 | 1.37 |
| Cyclamen aldehyde, 50% min. alde- | hyde content, dms. | 4.85 | - |
| 85.5% dms. | lb. | 7.36 | 9.20 |
| 90-92% dms. | lb. | 7.95 | - |
| Cyclohexane, bulk, barges, wks. | gal. | 1.08150 | 1.09150 |
| Cyclohexanol tech., tanks, f.o.b. | lb. | 55 1/2 | 58 1/2 |
| Cyclohexanone tech., tanks, f.o.b. | works | 55 1/2 | 58 1/2 |
| tanks, dwd | lb. | 565 | - |
| Cyclohexylamine, tech., tanks, | works | lb. | 85 |
| 2,4-O acetic, tech., 50-lb. bgs., c.l., | l.i. | 1.10 | 1.25 |
| works, frt. equiv. | lb. | - | - |
| 2,4-D butyl ester, tech., 50-lb. bgs., | c.l., l.i. | 1.30 | - |
| works, frt. equiv. | lb. | 1.25 | - |
| 2,4-D dimethylamine salt, t.c., l.i. | works, frt. ald. | 8.06 | - |
| ethyl alcohol, mixed isomers, tank | gal. | 32 | - |
| 90-92% dms. | lb. | 75 | - |
| perfluoro grade, dms. | lb. | .75 | - |
| Dechlorinated phosphate (tricalcium), | feed grade, 18% P, c.l., bulk, | 185.00 | 228.00 |
| f.o.b. works | tanks, dwd | 185.00 | 228.00 |
| Denatured alcohol, ethyl, C-18, C-18 | tanks, dwd E. | 1.87 | - |
| NOTE: Tankcar sales require written authorization by Alcohol | | | |
| and Tobacco Tax Reliance. | | | |
| Denatured alcohol, ethyl. | | | |
| SD28, tanks, dwd E. | gal. | 1.81 | - |
| SD3A, tanks, dwd E. | gal. | 1.78 1/4 | - |
| SD3A, tanks, dwd E. | gal. | 1.88 | - |
| SD23H, tanks, dwd E. | gal. | 1.98 | - |
| SD30, tanks, dwd E. | gal. | 1.83 | - |
| SD26, tanks, dwd E. | gal. | 1.79 1/2 | - |
| SD36A, tanks, dwd E. | gal. | 1.68 1/2 | - |
| Denatured alcohol, ethyl, brucine formula | | | |
| SD40, tanks, dwd E. | gal. | 1.83 | - |
| ethyl, optional formula, SD40, tanks, | dwd E. | 1.82 1/2 | - |
| For analysis on above formulas, prices are 12c. per gal. | | | |
| higher. | | | |
| West Coast dwd, prices are the same as Eastam prices, | | | |
| except in Idaho, Oregon and Washington where 5c. | | | |
| different or tankcar is maintained. | | | |
| Oxazoylurea hydrochloride (See Methaphosphatamine hy- | | | |
| drochloride) | | | |
| Detergent alkylates, straight chain | | | |
| dodecylbenzene, tanks, barges, | f.o.b. | .45 | - |
| Dextrin, corn, cased, paper bags, | c.l., works | 28.04 | - |
| white, paper bags, | c.l., works | 27.43 | - |
| Oxestros, amyld, cornl., bgs., c.l., | dwd, New York | 41.10 | - |
| UPB special, 100-lb. bgs., c.l., | dwd, New York | 46.50 | - |
| Oxestros, hydreted corn, bgs., c.l., | dwd, New York | 24.25 | - |
| West zone | lb. | 25.60 | - |
| Oleostone alcohol, acetone free, | tanks, dwd | .52 | - |
| Oleocyl, lauric grade, dms. | lb. | 9.25 | 15.00 |
| Diammonium phosphate, frt. grade, | min. 18% N, 48% P, bulk, c.l., | 140.00 | 145.00 |
| f.o.b. Pte. works | ton | | |
| Diammonium phosphate, feed grade, | 16% N, 20% P, bulk, c.l., Lo b. | 240.00 | - |
| Pte. works | ton | 250.00 | - |
| Diammonium phosphates, tech., bgs., | c.l., l.i. works, frt. | 52.90 | - |
| equivalent | 100 lbs. | | |
| food grade, bgs., c.l., l.i. same be- | | 67.50 | - |
| cause same basis | lb. | 57.50 | - |
| 2,4-OH-tert-amylphenol, min. 95.5% dms, | c.l., l.i. works | 1.04 | - |
| tanks, works | lb. | .87 | - |
| Diallyl ether, OT, (yellow 14), dms, | frt. ald. | 7.00 | 8.00 |
| o-Dianiline dihydrochloride, 100% MW 244, dms, l.i., dwd. | lb. | 4.25 | - |
| 2,4-OH-tert-Butyl-p-Cresol (see Butylated hydroxytoluene) | | | |
| Obayt | tanks, l.i. works | .77 | .86 |
| Dibutyl maleate tanks, f.o.b. works | lb. | .63 | .64 |
| Dibutyl phthalate, tanks, works | lb. | .64 | .80 |
| Dibutyl sebacate tanks, works | lb. | 1.12 | 1.68 |
| Dibutyltin oxide, dms, dwd. | lb. | 1.72 | - |
| tanks, same basis | lb. | 1.06 | - |
| 2,5-Dichloroaniline, liake, dms, | works | 1.20 | - |
| tased, dms, c.l., l.i. | lb. | 1.80 | - |
| 3,4-Dichloroaniline, tanks, dms, c.l., l.i., f.o.b. works | lb. | 1.48 | 1.57 |
| o-Dichloroaniline, tech., 80% dms, | c.l., l.i. dwd. | .82 | - |
| tanks, same basis | lb. | .46 | - |
| 80% dms, c.l., same basis | lb. | .64 | - |
| tanks, same basis | lb. | .47 | - |
| p-Dichloroaniline, graded, 300-lb. dms, l.i., f.o.b. | frt. ald. | .61 | .82 |
| tanks, l.i., same basis | lb. | .43 | .47 |
| 2,8-Dichloro-4-nitroaniline, 10,000 lbs. or more, works | lb. | 3.30 | - |
| Dichlorophenylacetone acid (see 2,4-D.) | | | |
| Dichlorophenylamine, dms, c.l., l.i., | f.o.b. | 1.35 | - |
| tanks, same basis | lb. | 1.25 | -</ |

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|---|-----|--------------|--------|
| phosphoric, sawage grade, 100 percent basis, f.o.b. works, tank | ton | 178.00 | 255.00 |
| crystalline, crystal, dms., 1 l., l.o.b. lb. | lb. | .84 | - |
| nitrate, tech. gran, 90-90 dms., f.o.b. works | ton | 1.86 | - |
| nitrates (see Iron Oxide) | | | |
| orthophosphate, FCCG soluble powder, 100, 10,000 lbs. | lb. | 1.10 | 1.15 |
| pyrophosphate, soluble, purified, 50 lbs. can | can | 1.11 | - |
| resinate, precip., 8.76% Fe, dms., tonlots fr. | lb. | .45 | - |
| sulfate, partly hydrated, 100-lb. cts., works | ton | 141.00 | - |
| basic, works | ton | 117.00 | - |
| ammonium citra., HF, brown, granular, 100 lb. dms., 2,000 lb. min., f.o.b. shipping | lb. | 2.00 | 2.85 |
| ammonium citra., 100 lb. dms., 2,000 lb. min., f.o.b. shipping W. of Denver | lb. | 2.00 | 2.85 |
| ammonium oxalate, fine, works | ton | 250 lb. dms. | - |
| E. E. I., f.o.b. works | lb. | .42 | - |
| hydroxyethylene diamine-sulfonic acid, industrial grades, sodium salt, soln., 4.5% Fe, t.c., l., f.o.b. works | lb. | .56 | - |
| furfuraldehyde, sodium salt solution, 5% Fe, t.c., l., f.o.b. works | lb. | .64 | - |
| fluoroborate liq. concn, dms., l., works, fr. equid. | lb. | .64 | - |
| glucose, NF, l., works E. I. B. Co. | lb. | 2.25 | - |
| naphthalene, liq., 5% Fe, f.o.b. works | lb. | 1.17 | - |
| sulfite, moist, bulk, l., f.o.b. works | ton | 30.00 | - |
| hydrate, gran., bulk, l., f.o.b. works | ton | 145.00 | 150.00 |
| anhydride, gran., bulk, l., f.o.b. works | ton | 170.00 | 180.00 |
| 3P, powder, 400-lb. dms. | lb. | .49 | - |
| refr., 250-lb. dms. | lb. | .81 | - |
| 3A, 400-lb. dms. | lb. | 10.00 | - |
| borates, dms. | lb. | 12.75 | - |
| of, reld., alkali, tanks, c. | lb. | .29 | - |
| acid-bodied, tanks | lb. | .32 | .36 |
| oil-treated, dms., c. | lb. | .34 | - |
| normal, dom., menhaden, 80% protein gp., bulk, l.o.b. Atlantic Gulf ports | ton | 265.00 | - |
| lentic port, bulk, l.o.b. Atlantic Gulf ports | ton | 290.00 | - |
| Chilean, 85% protein min., bulk, c., l., at whse., L. B. Atlantic and Gulf ports, .ton | ton | 285.00 | - |
| boreic acid, U.S.I., works, fr. equid. | lb. | .70 | - |
| procarbon, No. 11 bulk, tanks, devald. | lb. | .57 | .64 |
| No. 12, bulk, same basis | lb. | .66 | .74 |
| No. 22, bulk, same basis | lb. | 1.05 | 1.14 |
| No. 30, bulk, same basis | lb. | .89 | .93V |
| No. 114, bulk, same basis | lb. | 1.02 | 1.08 |
| acid (see Hydrofossilic acid). | | | |
| methylated, 3% methanol free (unintegrated), puf. | ton | .088 | .0906 |
| 44-45% (3% methanol) free | ton | .1015 | .1065 |
| 37% (inhibited 7% methanol) | ton | .0945 | .1025 |
| 37% (inhibitor 1%-12% methanol) | ton | .1055 | .1060 |
| acid, dms. | lb. | .39 | - |
| membrane, tanks, f.o.b. | lb. | .44 | - |
| dms., same basis | lb. | .39 | - |
| rylic acid 90% tanks, f.o.b. works | lb. | .36V | - |
| 95% dms., c., works | lb. | .51V | - |
| citricose, crystal, 18,000 kilos or more | ton | .90 | 1.03 |
| acid, liquid, loading | ton | .75V | .77V |
| merch. grade, bgs., l., l.o.b. fr. equid. | lb. | - | .62V |
| fruits, tanks, f.o.b. Cedar Rapids, Iowa, and Buila Glade, Fla. | ton | .76 | - |
| fruity alcohol, tanks, Lo to Memphis, Tenn. and Omaha, Neb. | lb. | .72 | - |

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| CHEMICAL PRICES | | |
|---|-------|-------|
| ENDING DEC. 19, 1988 | | |
| extracted, green, fatty- | lb. | - |
| ams, bgs, c.i. l.o.b. | lb. | - |
| ams, bgs, c.i. l.o.b. | lb. | 68 |
| ams, bgs, c.i. l.o.b. | lb. | 78 |
| ams, bgs, c.i. l.o.b. | lb. | 77 |
| ams, bgs, c.i. l.o.b. | lb. | 79 |
| ams, bgs, c.i. l.o.b. | lb. | 87 |
| ams, bgs, c.i. l.o.b. | lb. | 93 |
| ams, bgs, c.i. l.o.b. | lb. | 80 |
| ams, bgs, c.i. l.o.b. | lb. | 85 |
| ams, bgs, c.i. l.o.b. | lb. | 90 |
| ams, bgs, c.i. l.o.b. | lb. | 90 |
| ams, bgs, c.i. l.o.b. | lb. | 100 |
| ams, bgs, c.i. l.o.b. | lb. | 105 |
| ams, bgs, c.i. l.o.b. | lb. | 110 |
| ams, bgs, c.i. l.o.b. | lb. | 115 |
| ams, bgs, c.i. l.o.b. | lb. | 120 |
| ams, bgs, c.i. l.o.b. | lb. | 125 |
| ams, bgs, c.i. l.o.b. | lb. | 130 |
| ams, bgs, c.i. l.o.b. | lb. | 135 |
| ams, bgs, c.i. l.o.b. | lb. | 140 |
| acid, 99% dms. 100-lb. | 885 | - |
| is. lrt. add. | 885 | - |
| anal. reld. USP, CP 88% | 89% | - |
| ams, divd. | 87% | - |
| 5%, tanks divd. | 891 | - |
| 5%, tanks divd. | 91 | - |
| Antioxi-c acid | - | - |
| butylate 100-lb. lts. dms. | 1450 | - |
| o. b. | 44½ | - |
| id (see Hydroxyacetic acid) | 300 | - |
| 40% soln., bulk, tanks | 300 | - |
| divd. | 300 | - |
| cal Fla, dms. | 300 | - |
| ams. | 300 | - |
| amorph, powd., bgs, dms. | 16 | 40 |
| whse. | 30 | 60 |
| 88-90%, powd., bgs, dms. | 40 | 75 |
| cryst., 90-92% powd., bgs. | 80 | 90 |
| ams, ex whse. | 80 | 90 |
| 8% powd., bgs, dms., ex whse. | 80 | 90 |
| amorph, cryst., 87% endup. | 80 | 120 |
| powd., bgs, dms., s.a. | 80 | 120 |
| whse. | 80 | 120 |
| fleke, No. 1, 90-95% bgs. | 65 | 75 |
| dx whse. | 65 | 75 |
| 2, 90-95%, bgs, dms. ex whse. | 65 | 75 |
| whse. | 65 | 75 |
| See Oils, Fats & Waxes market report | - | - |
| (See Lard oil) | - | - |
| tech., 500-lb dms., 24,000lb | 2.70 | - |
| min., l.o.b. Wallingford, | 3.75 | - |
| CocCoat | 2.70 | - |
| ood oil, dms. | 2.70 | - |
| am, dibase, bgs., c.i. l.o.b. | .50 | .75 |
| ship't. pt. | .50 | .75 |
| t, bgs., high viscosity, c.i. | .50 | .85 |
| same base | .50 | .85 |
| glt. dms. | 8.00 | 8.25 |
| oil (see Spruce oil) | 55 | - |
| leaves, lbs. | 1.07 | - |
| la, indust., tanks, l.o.b. Beau- | 1.18 | - |
| mont, Tex. | .65 | - |
| ams, l.o.b. Houston, | .43% | - |
| Tex. | 1.42 | - |
| alc acid, syn., tanks, l.o.b. | .55 | - |
| decanol, syn., tanks, l.o.b. | .59 | - |
| hydrophthalic anhydride, tech. | .80 | - |
| dms., ltl. l.o.b. works | 1.01 | 1.15 |
| ethylene glycol, gran, bgs, | 1.12 | - |
| c.i. ltl. works | .50 | - |
| gran, dms., c.i. ltl. works | .76% | - |
| padr, bgs., c.i. ltl. works | .50 | - |
| powd, dms, c.i. ltl. works | 30.00 | - |
| leaded tanks works, ltl. gal, | 10.26 | 11.30 |
| tanks, l.o.b. Houston, | 9.70 | 10.70 |
| Tex. | 25 | 28 |
| al, syn., tanks, l.o.b. | 1.54 | - |
| alcohol, mixed isomers, | 1.61 | - |
| tanks. | 7.50 | - |
| yl methacryl, dms., c.i. | 8.80 | - |
| works. | 8.80 | - |
| dms, glycol, tanks, divd. | 30.00 | - |
| resorcinol, USP, dms., 25-lb. lots | 10.26 | 11.30 |
| or more, lrt. add. | 9.70 | 10.70 |
| ethylene hydrotank, USP, 10- | 25 | 28 |
| 100-oz. lots, lots. | 1.54 | - |
| propene methylbromide, USP, 10- | 1.61 | - |
| 250 oz. lots, lots. | 7.50 | - |
| ound herb, bis. | 8.80 | - |
| 82% zinc hydrate | 1.54 | - |
| zinc hydrate, bis. | 1.61 | - |
| 56-gal dms. U. lrt. add. | 7.50 | - |
| odio acid, purif., 47%-57%, 2- | 8.80 | - |
| days, l.o.b. works | 8.80 | - |
| zinc, l.o.b. zone 1 | 30.00 | - |
| ams, c.i. l.o.b. zone 1 | 10.26 | 11.30 |
| tanks, l.o.b. zone 1 | 9.70 | 10.70 |
| chromic acid, 48% dms., c.i. ltl. | 25 | 28 |
| l.o.b. | 1.54 | - |
| l.o.b. | 1.61 | - |
| octo formic acid, anhyd. (see Hydrogen phthalide) | 7.50 | - |

| | | |
|--|----|------|
| Perchloroethylene, dry cleaning grade, clear liquid | lb | 2914 |
|--|----|------|

| | | | |
|---|------|----------|----------|
| Phthalocyanine blue toner, water dispersible, bbls., same base | lb. | 9.45 | 17.50 |
| Phthalocyanine green toner, at grades, bbls., frt. ald. E. of Rockies | lb. | 9.30 | 14.00 |
| Phthalocyanine green toner, at grades, bbls., same base | lb. | 8.86 | 9.45 |
| Phthalocyanine cyanine, dms., 500-1000 | lb. | 8.81 | - |
| Picolines, red, mixed, bulk, 100 lbs. | lb. | 2.91 | - |
| Picric acid, pure paste, 25-lb. dms., c.i., dry base, l.o.b. Cherille, N.C. | lb. | 8.00 | - |
| tech. paste, 25-lb. dms., l.i., dry base, l.o.b. Cherille, N.C. | lb. | 8.00 | - |
| Pigment green 8, gns. | lb. | 5.20 | - |
| Picoplano hydrochloride, USP. | dms. | 1,600.00 | 2,000.00 |
| Pimento see Alligat | lb. | 13.90 | - |
| Pimento leaf oil, frt. ald. | lb. | 47.00 | 83.00 |
| Pine oil, 80% min. alcohol content, bulk, 100 lbs. | lb. | 61.00 | 64.00 |
| dms., c.i., l.i. | lb. | 1.62 | - |
| a-Phenyl, perfume grade | lb. | 18 | 23 |
| tech. grade | lb. | 2.30 | - |
| b-Phenyl, perfume grade, tanks | lb. | 35 | 40 |
| tech. grade, tanks | lb. | 1.80 | - |
| Piperazine, drys., dms. | lb. | 2.26 | 2.86 |
| E | lb. | 2.00 | - |
| Piperazine citrate, 38% dms., 1,100-lb. tote, frt. ald. | lb. | 2.26 | 2.86 |
| Piperazine hydrochloride, 100% dms., 1,100-lb. tote, frt. ald. | lb. | 1.60 | - |
| Piperazine hydroxide, 44% dms., 1,100-lb. tote, frt. ald. | lb. | 1.80 | - |
| Piperazine sulfate, 42% dms., l.i., frt. ald. | lb. | 8.92 | - |
| Piperidine citrate, 98% min. dms., c.i., l.i., works | lb. | 6.00 | - |
| Pipernonyl butoxide dms., divd. E. | lb. | 493.00 | - |
| Platinum, work, same base, 100 lbs. | lb. | 1.64 | 1.86 |
| Polycarbonate resin, pellets, nat. l.i., frt. ald. | lb. | 1.84 | 1.86 |
| Polyester resin, unamstated, g.p., or isophthalic, bulk, laminated | lb. | 51 | 53 |
| frt. ald. | lb. | 59 | 62 |
| isophthalic, same base | lb. | 44 | 52 |
| Polyethylene resin, high-density, blow molding, g.p., hopper cars, frt. ald. | lb. | 43 | 49 |
| Injection molding, g.p., hopper cars, frt. ald. | lb. | 47 | 49 |
| extrusion, g.p., hopper cars, same base | lb. | 54 | 65 |
| wire and cable, nat., hopper cars, same base | lb. | 95 | 75 |
| wire and cable, black, same base | lb. | 35 | 36 |
| Polyethylene resin, low-density film liner, hopper cars, frt. ald. | lb. | 35 | 37 |
| clarity film, hopper cars, frt. ald. | lb. | 35 | - |
| pellet extrud. film, hopper cars, same base | lb. | 36 | - |
| extrusion coating, hopper cars, same base | lb. | 36 | 42 |
| g.p., hopper cars, same base | lb. | 37 | 39 |
| Polyethylene linear low-density g.p. resin | lb. | 38 | 40 |
| blown film resin | lb. | 40 | 43 1/2 |
| cast resin | lb. | 40 | 45 |
| Polyethylene resin, high-density, injection molding, g.p., hopper cars, same base | lb. | 45 | 48 |
| linewire, CATV, power cable | lb. | 70 | 1.15 |
| wire and cable thermoplastic, voltage, natural color, same base | lb. | 80 | 90 |
| wire and cable, XLPE low voltage, 14% carbon black | lb. | 68 | 73 |
| wire and cable jacketing, black lb. | lb. | 60 | 81 |
| Polypropylene sulfate, USP, bulk, 50-100 lbs. min. | lb. | 62 | - |
| Polyoxyethylene acrylonitrile monosulfate, dms., 20,000-lb. tote, works | lb. | 73 | - |
| Polyoxyethylene sodium trifluoromethyl sulfonate, 2100-lb. tote, works | lb. | 73 | - |
| Polypropylene resin, homopolymer, g.p., nat. l.i., frt. ald. | lb. | 45 | 48 |
| copolymer, med. impact, same base | lb. | 50 | 56 |
| high impact, same base | lb. | 53 | 60 |
| Colored material for p.p., higher for each grade | lb. | 46 | - |
| Polyethylene resin, cryat. nat., hopper cars, frt. ald. | lb. | 51 | - |
| Impact, nat., hopper cars, same base | lb. | 52 | - |
| high melt, high impact, nat., hopper cars, same base | lb. | 52 | - |
| expandable grade (EPS), pigging grade, 1,000-lb. tote | lb. | 69 | - |
| modified, same base | lb. | 78 | - |
| Polyvinyl alcohol, fully hydrolyzed, medium viscosity, bgs., l.i., dtd. | lb. | 1.00 | 1.06 |
| partially hydrolyzed, medium viscosity, bgs., l.i., dtd. | lb. | 1.05 | - |
| Polyvinyl chloride resin, g.p., homopolymer despatch, bgs., l.i., dtd. | lb. | 50 | - |
| g.p. suspension, bulk, same base | lb. | 38 | - |
| pipe grade, bulk, same base | lb. | 47 | - |
| rigid, bulk, same base | lb. | 37 | 47 |
| Polyvinyl chloride, g.p. copolymer despatch, same base | lb. | 58 | 61 |
| g.p. copolymer suspension, same base | lb. | 45 | 48 |
| Poeyene, Dutch, bulk | lb. | 59 | - |
| Turkey, bgs. | lb. | 53 | - |
| Polish agricultural (see Potassium sulfate). | lb. | 13.00 | - |
| Polish, ceramic, 10% 45% base, tanks, works | lb. | 19.08 | - |
| West Coast, 60% base, tanks, ex terminal | lb. | 42.35 | - |
| reg. tanks, 80-92% 400-lb. dms., c.i., works | lb. | 90 | 1.31 |
| Potassium acetate, 400-lb. dms., l.i., works E. | lb. | 31 1/2 | - |
| Potassium bicarbonate, tech., gran., bgs., c.i., works | lb. | 39 | - |
| Potassium bicarbonate, USP, gran., dms., l.i., works | lb. | 314 | - |

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| Potassium bichromate, gran., 400-lb. drms., c.i., U.I. works..... | .48 | - |
| Potassium bifluoride, tech., drms., U.I. works, fr. equiv..... | .45 | .49 |
| Potassium bitartrate, NF, gran., 200-lb. bags..... | .90 | 2.20 |
| Potassium borohydride, powd., drms., 100-1,000 lbs., 5-dm. lots..... | 18.00 | 20.00 |
| Potassium bromate, gran., packd., 200-lb. drms., f.o.b. works..... | 1.06 | - |
| Potassium bromide, NF, gran., drms., c.i., f.o.b. works..... | 1.12 | - |
| Potassium carbonate, K ₂ CO ₃ , 47% min. drms., U.I. works, 100 lbs. caldred, 99-100% K ₂ CO ₃ , hopper cgs or 100 lbs. works..... | 14.60 | 20.86 |
| Potassium carbonate, gran., purif., 400-lb. drms., 5-dm. lots..... | .40 | .48 |
| Potassium chromate, cryst., drms., c.i., U.I. works..... | .14½ | - |
| powd., drms., c.i., works..... | .30 | - |
| purif., gran., 325-lb. drms., f.o.b. shipping point..... | .40 | - |
| Potassium chlorate, chem. anal. grade, 99.95% KClO ₃ , bulk, c.i., f.o.b. works..... | 105.00 | - |
| USP cryst. drms..... | 1.12 | - |
| USP gran., drms..... | .87 | - |
| USP powd., drms..... | .67 | - |
| Potassium chloride, agricultural (see Potassium sulfate). | - | - |
| Potassium chromate, purif., cryst., drms., works..... | .57 | - |
| Potassium citrate, NF, gran., 300-lb. drms., f.o.b. works..... | .93½ | - |
| Potassium cyanide, drms., 20,000-lb. lots or more, f.o.b. works..... | 1.32 | - |
| Potassium dichromate (see Potassium bichromate). | - | - |
| Potassium fluoride, tech., drms., c.i., U.I. works, fr. equiv..... | 1.40 | 1.42 |
| Potassium fluoride, anhyd., drms., U.I. works..... | 1.69 | - |
| Potassium gluconate, drms., U.I. f.o.b. works..... | 1.45 | - |
| Pice W. of Denver 4¢ per lb. higher. | - | - |
| Potassium guaiacolate, 300-lb. drms., 600 lbs. or more fr. equiv..... | 2.10 | - |
| Potassium hydroxide, tech., 100-lb. drms., c.i., U.I. works, fr. equiv..... | 1.31 | 1.33 |
| Potassium iodide, USP, gran., cryst., drms., 100-lb. bags..... | 10.72 | 12.39 |
| ACS grade truckload..... | 11.32 | 13.55 |
| Potassium-magnesium sulfate, atd., bgs., works..... | 59.00 | - |
| basic, 40% K ₂ O, 100-lb. bags, MgSO ₄ bulk, works..... | 87.00 | - |
| Potassium metabisulfate, gran., drms., U.I. works..... | .44 | - |
| Potassium muriate, 80-92.4% min. K ₂ O, atd., bulk, fr. equiv., f.o.b. Sask. Canada..... | 52.00 | 53.00 |
| soluble, line atd., f.o.b..... | - | - |
| Sask..... | 58.50 | 64.50 |
| coarse, f.o.b. Sask..... | 57.00 | 58.00 |
| gran., f.o.b. Sask..... | 58.50 | 59.50 |
| Potassium nitrate, fert. grade, atd., 50-ton c.i., divd. SE..... | 267.00 | 274.00 |
| prills, fert. grade, atd., 50-ton c.i., divd., tech., gran., f.g., c.i., min. 50 tons, divd..... | 277.00 | 294.00 |
| Potassium oxalate, neutral, tech., line gran., powd., 300-lb. drms., f.o.b. equiv..... | 2.54 | - |
| Potassium pentaborate, gran., bgs., c.i., works..... | 1.01 | - |
| drms., same basis..... | 1.08 | - |
| Potassium persulfate, 100-lb. bags, per lb. Higher..... | - | - |
| Potassium persulfate, drms., c.i., works..... | .76 | - |
| Potassium permanganate, fine flow-ing, bulk, hopper trucks, work..... | 1.09 | - |
| 50-kg. drms., same basis..... | 1.12 | - |
| 150-lb. drms., same basis..... | 1.27 | - |
| Potassium permanganate, USP, 60-lb. bgs., works, c.i., U.I. works..... | 1.38 | - |
| Potassium persulfate, 240-lb. bags, 240 lbs. or more, f.o.b. plant..... | 78.00 | - |
| c/i, same basis..... | 72.90 | - |
| Potassium pyrophosphate, tech., gran., bgs., c.i., U.I. works, E. fr. equiv..... | 63.75 | 64.00 |
| liquid, bulk..... | 46.00 | 49.50 |
| Potassium sesquifluoride, USP, gran., 200-lb. bags, 2,000 lbs. or more, works, fr. atd..... | 1.52 | - |
| USP, powd., 300-lb. drms., 2,000 lbs. or more, same basis..... | 1.42 | - |
| Potassium silicate, 28-30.2% SiO ₂ , 2.5 ratio, c.i., U.I. works..... | 100 lbs. 19.90 | - |
| c.i., U.I. works..... | 100 lbs. 25.00 | - |
| Potassium silicate, 40-40.5 Be, 2.1 ratio, c.i., U.I. works..... | 100 lbs. 36.05 | - |
| 40-40.5 Be, 2.1 ratio, drms., c.i., U.I. works..... | 100 lbs. 32.05 | - |
| Potassium silicate, electronic grade, 90-30.4 Be, 2.1-2.2 ratio, c.i., U.I. works..... | 100 lbs. 28.10 | - |
| drms., c.i., U.I. works..... | 100 lbs. 33.10 | - |
| solid or glass, 2.15 ratio, drms., c.i., U.I. works..... | 100 lbs. 63.30 | - |
| solid or glass, 2.5 ratio, drms., c.i., U.I. works..... | 100 lbs. 45.85 | - |
| "Ratio" indicates percentage by weight of SiO ₂ divided by percentage by weight of K ₂ O. | - | - |
| Potassium sulfonate, bgs., c.i., fr. equiv..... | .11½ | .15 |
| Potassium-sodium tartrate, NF, gran. or powd..... | .80 | 1.20 |
| Potassium sorbate, U.I. drms., divd., lb. works..... | 2.50 | 3.10 |
| Potassium stannate, drms., c.i., U.I. works..... | N.A. | - |
| Potassium sulfate, natural gran. min. 50% K ₂ O and end, c.i., f.o.b. works..... | 100 lbs. 50.00 | 160.00 |
| Potassium sulfate, gran., purif., 400-lb. drms., 5-dm. lots..... | .50 | - |

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| Potassium tetraborate, gran., bgs., c.l. | | |
| works..... | lb. | 1.10 - |
| Potassium tetraborate, fine, 99% min. | ton | 1.15 - |
| Potassium thioacetate, USP, crys., 225-lb. dms., 5-dm. lots..... | lb. | .82 - |
| tech. crst., dms., t.l. | lb. | .601 - |
| Potassium thiocyanate, USP, crys., works..... | lb. | .71% - |
| Potassium-titanium fluoride, tech., dms., l.t., work, frt. equivalent | lb. | 1.24 1.59 |
| Potassium alum, USP, 100-lb. lots, dms., i.t., works, frt. equivd..... | lb. | .76 - |
| Prednisone USP, dms., 5 kilos or more..... | gram | 1.03 - |
| Prednisolone acetate, USP, dms., 5 kilos or more..... | gram | 1.12 - |
| Prednisolone, anhyd., USP, dms., 5 kilos or more..... | gram | 1.12 - |
| Procaine hydrochloride, USP, anal- oid grade, dms., 2,000-lb. lots, frt. aid..... | lb. | 4.05 5.75 |
| Procaine hydrochloride, USP, emuls. grade, dms., 1,000- lb. lots, frt. aid..... | lb. | 4.95 5.80 |
| Propionic aldehyde, tanks, f.o.b. | lb. | .38% - |
| Propionic acid, eyn. pure, tanks, divid. E..... | ton | 3.3% |
| n-Propyl acetate, tanks, divid. | lb. | 53% - |
| n-Propyl alcohol, tanks, divid. | lb. | .42 .44 |
| n-Propyl carbamate, 100 to 2,000-lb. lots, divid. | lb. | 11.50 - |
| n-Propyl-p-hydroxybenzoate, USP, 500 kils. | kilo | 10.30 - |
| tech., 500 kils. f.o.b. | kilo | 10.86 - |
| Propyl paraben (see n-propyl-p-hydroxybenzoate) | | |
| Propyl phosphate, dms., 50-kilo lots or more..... | kilo | 56.00 - |
| n-Propylamine, dms., c.l., divid. | lb. | .75 .80 |
| Propylene, polymer grade, f.o.b. Tex. and Lx. Gulf Coast points .. | lb. | .17% - |
| chemical grade same basis..... | lb. | .15% .16 |
| Propylene glycol, indust. tanks, f.o.b. itz. | ton | .40 .42 |
| USP, tanks, f.o.b. E..... | lb. | .43 .45 |
| Propylene glycol monomethyl ether, tanks, divid. E..... | lb. | .49 - |
| Propylene oxide, tanks, f.o.b. works, frt. equivd..... | lb. | .47% - |
| Pumice, USP, coarse, fine, grad. | ton | 1.50 1.75 |
| pumice, med. fine, 4F-0, bgs., ton lots..... | ton | 270.00 - |
| medium, 0½-1½, bgs., ton lots..... | ton | 300.00 - |
| coarse, 2-extra coarse, bgs., ton lots..... | ton | 300.00 - |
| Pumice, imp., Italian, fines, bgs., ton lots f.o.b. East Coast..... | ton | 280.00 - |
| medium, bgs., ton lots f.o.b. East Coast..... | ton | 350.00 - |
| coarse, bgs., ton lots f.o.b. East Coast..... | ton | 300.00 - |
| Pyrazolones red (red 3B), dms., works..... | lb. | 13.00 15.45 |
| Pyrethrins flowers, line, grad. 0.8% pyrethrin, ton lots, frt. aid lb. | lb. | 1.91 - |
| Pyrethrum, purif., 20% pyrethrins, dms., works..... | lb. | 37.50 37.75 |
| Pyridine, 2-deg., c.l. works..... | lb. | 5.90 - |
| tanks..... | kilo | 5.70 - |
| Pyridoxine hydrochloride, USP, 100 kils. | lb. | 38.00 - |
| Pyrite, C. Gooden 48-50% S, mines..... | long ton | 4.50 5.00 |
| Pyrogallic acid (see Pyrogallol) | | |
| Pyrogallol, 100-lb. dms., 1,000-lb. lots, divid. | lb. | 13.70 15.25 |

Q

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| Quassia chips..... | lb. | .57 - |
| Quinacridone maroon, dms., frt. aid..... | lb. | 27.00 35.20 |
| red, dms., frt. aid..... | lb. | 24.25 32.30 |
| violet, dms., frt. aid..... | lb. | 24.80 32.00 |
| Quinine seed, bgs..... | lb. | 2.00 2.75 |
| Quinidine sulfate, USP, 1,000-oz. dms., 2,000-oz. lots..... | lb. | 4.20 4.25 |
| Quinine hydrochloride, NF, 1,000-oz. dms., 2,000 oz. or more..... | lb. | 2.46 2.50 |
| Quinine sulfate, USP XVII, 1,000-oz. dms., 2,000-oz. lots..... | lb. | 2.90 2.90 |
| Quinolone, d.s., frt. equivd..... | lb. | 1.49 - |
| quinol, same basis..... | lb. | 1.43 - |

R

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| R aceteth, 904 molecular wt..... | lb. | |
| Racemethionine, USP, 50-250 kilo | kg. | 8.80 - |
| 250-500 kilos..... | kg. | 8.80 - |
| 50 or 60 more kilos..... | kg. | 6.50 |
| feed grade, 89% min., c.l. | lb. | 1.07 1.08% 28% |
| Reauvillie serpentine root, powd. bs., dms..... | lb. | 22.00 - |
| Red cambrine, No. 40 (see Cambrine No. 40) | | |
| Red precipitate, (see Vanadium oxides) red | | |
| Reserpine, USP, crys., bols..... | gram | 3.95 - |
| Resorcinol, bgs., l.t., works, divd..... | lb. | 9.35 - |
| Resorcinol, USP, crys., dms. 50 kilos or more, works..... | kg. | 9.35 - |
| powd. dms., same basis..... | kg. | 1.98 - |
| Resorcinol monoacetate, dms., 1,000 lb. or more..... | lb. | 9.25 - |
| Rhodamine red toner, polybedated, PIAA, dms., f.o.b. works..... | lb. | 11.50 14.00 |
| Rhodolite, 25-lb. dms..... | lb. | 105.00 105.10 |
| syn. dms..... | lb. | 13.25 - |
| Rhubarb root, indie. whole, bgs., powd. | lb. | .81 - |
| Riboflavin, USP, feed grade, 28 kilos bs..... | kg. | 34.50 - |
| Riboflavin, USP, 25 kilos, divd., dms., 2,000-oz. lots..... | kg. | 46.50 - |
| Riboflavin 5-phosphate, USP, 25 kilo | kg. | 198.00 - |

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| Sodium bicarbonate, USP, powder, reg. | | | |
| grade, bgs., c.l./l. works | ft. equivalent | 100 lbs. | 17.05 |
| coarse, same basis | | 100 lbs. | 19.05 |
| fine, same basis | | 100 lbs. | 17.20 |
| gran. same basis | | 100 lbs. | 17.85 |
| gran. fine, same basis | | 100 lbs. | 17.60 |
| Sodium chlorate, gran., bgs., c.l./l. works | ft. equivalent | | .57 |
| Sodium sulfate, 40% dms., c.l./l. ft. equivalent | | | .78 |
| 100-lb. bag, c.l. same basis | | lb. | .79 |
| Sodium bisulfite, bulk, c.l. works | | ton | 175.00 |
| Sodium bisulfite, anhyd. 100 lb. ton works, East | | 100 lbs. | 28.50 |
| works, West | | 100 lbs. | 32.00 |
| Sodium bisulfite, soln. 35%, bulk, 100% basic, water | | 200 lbs. | 20.50 |
| soln. 100% bds. works, West | | 100.00 | 20.00 |
| photographic grade, 43% soln. works | | 100 lbs. | 21.50 |
| Sodium benzoate, Hf, gran., bgs., c.l. works | | | .51 |
| powd., same basis | | | .52 |
| Sodium borohydride, powd., dms. | | | |
| 1000-5000 lbs. works | | | 19.88 |
| Sodium borohydride, technical, 100% pure, 12% NaBH ₄ , 100% basic, 3000 gal. tankard, works | | | 17.45 |
| Sodium bromide, 99%, gran., 400-lb. bags, f.o.b. works | | | 1.04 |
| Sodium carbonate, bicarbonate, bgs., c.l./l. works | | ton | 254.00 |
| Sodium carbonate, cryst. monohydrate (see Soda ash) | | | |
| Sodium carbonyl, monohydrated, lvs., c.l./l. works | | | 392.00 |
| Sodium carboxymethylcellulose (see CMC) | | | |
| Sodium chlorate, crystal, bulk, t.c./l., delivered N.E. | | ton | 330.00 |
| chlorate, crystal, 450-lb. dms., c.l. works E | | | .27 |
| Sodium chloride, tech. (see Salt) | | | |
| Sodium chloride, USP, gran., bgs., c.l./l. works | | | .29 |
| Sodium chlorate, tech., dms., c.l./l. works | | | 1.17 |
| Sodium chromate, anhyd., dms., c.l./l. works | | | .87 |
| Sodium chromate, tetrahydrate, bgs., c.l./l. works | | | .64 |
| Sodium citrate, gran., anhyd., 200-lb. bags, c.l./l. N.Y. | | | 1.95 |
| Sodium citrate, USP, gran., dihydrate, 100-lb. bgs., lt. f.o.b. shipping point | | | .74½ |
| Sodium cyanate, dms. 1000-lb. lots, works | | | .85 |
| Sodium cyanide, briquettes, 100% pure, 95% min., 200-lb. dms. min. ref. | | | .71 |
| Sodium decanoate, anhyd., dms., c.l. works | | | .88 |
| Sodium dicarlate, FCC, 50-lb. bgs., 1/l. div'd. E. of Rockies | | | .61 |
| Sodium dicarlate, tech., 50-lb. dms., c.l. work | | | .52 |
| Sodium erythralate, powd., gran. or mixed 1/l. f.o.b. shipping point | | | 2.50 |
| Pure W. of Denver, 1000 pound higher. | | | 2.85 |
| Sodium ferrocyanide, bgs., c.l./l. works | | | .50 |
| Sodium fluoroborate, tech., gran., dms. | | | 1.77 |
| Sodium fluoride, 100% pure, 100-lb. dms., c.l. works | | | 1.34 |
| 100 bgs., c.l. same basis | | | .80 |
| USP powd., 200-lb. dms., 1/l. f.o.b. shipping point | | | 4.89 |
| Sodium formate, bgs., c.l. works | | | .20 |
| Sodium gluconate, tech., 50-lb. bgs., 2,500 lbs. gross wt. aft. loss | | | .80 |
| Sodium hydroxide, 40% caustic, 100% NaOH, 167-lb. tons, 10 dms. works | | | 1.68 |
| Sodium hydrosulfite, (see Sodium sulfhydrylate) | | | |
| Sodium hydrosulfite, dms., c.l./l. f.o.b. shipping point | | | .54 |
| Sodium hydroxide, USP pellets, 100-lb. dms., c.l./l. works, ft. equivalent | | | .88 |
| Sodium hypochlorite, 50% (see Caustic) | | | 1.06 |
| Sodium hyposulfite, Enlgrode, 300 lb. dms. 100 lbs. | | | 1.425 |
| 110 lb. dms. | | | 1.47 |
| Sodium hypophosphite, 100% (see Phosphate) | | | 1.52 |
| Sodium laurate, USP, crystals, 300-lb. 600-lb. lots, dms. ft. equivalent | | | 14.72 |
| Sodium laureyl sulfate, 30%, tanks, f.o.b. works | | | 29 |
| Sodium metasilicate, 100 lbs. 25.50 | | | |
| Sodium metabisulfite (see Sodium bisulfite) | | | |
| Sodium maleborate, orthosilicic acid, gran., bgs., c.l. works | | | .38 |
| tetrahydrate, gran., bgs., c.l. works | | | .49 |
| Sodium molybdate, 12-lb. bricks, dms., c.l. works | | | .93 |
| fused, dms. 54,000-lb. lots or more, works | | | .87 |
| tanks, works | | | .70 |
| Sodium metaphosphate, 100% pure, f.o.b. shipping pt. ft. equivalent | | | 91.50 |
| foodgrade, bgs., c.l./l. ft. equivalent | | | 98.25 |
| Sodium metphosphate, 100% pure, bulk, c.l. works | | | 27.25 |
| pentahydrate, bgs., c.l./l. f.o.b. shipping point | | | 26.30 |
| bulk, works | | | 19.85 |
| Sodium molybdate, anhyd., dms. f.o.b. works | | | 17.20 |
| Sodium molybdate, anhyd., dms. f.o.b. works, 100 lbs. and over | | | 4.67 |
| cryst., dms., lt., same basis | | | 4.12 |
| Sodium molybdotrioxide, dms., c.l./l. f.o.b. works | | | 2.00 |
| Sodium Nitrate, USP, bgs., c.l./l. ft. equivalent | | | 94.50 |
| Sodium nitrate, double salt, technical, bulk, c.l. works | | | 294.00 |
| Imp. cons., 100-lb. bgs., c.l./l. ft. equivalent | | | 255.00 |
| Gull value | | | 208.00 |
| same basis | | | 214.00 |
| Imp. aggricultural, bulk, c.l. same basis | | | 140.00 |

| | | | |
|--|----------|--------|--------|
| Sodium orthoacetate, tech., anhyd., bgs., c.i., works..... | 100lbs. | 84.50 | - |
| Sodium orthoacetate, tech., hydrated, fine, dms., c.i., works..... | 100lbs. | 27.46 | - |
| bgs., c.i., works..... | 100lbs. | 23.25 | - |
| Sodium oxalate, 99%, bgs., i.l., works, lb. | 100 | 46 | - |
| Sodium pentachlorophosphate, beads c.i., 30,000-60,000..... | lb. | 57 | - |
| bgs..... | lb. | 66 | - |
| Sodium pentoborates (see Pentoborates-acidum) | | | |
| Sodium perborate, tetrahydrate, tech., bgs., c.i., works..... | lb. | 32 1/2 | 38 1/2 |
| Sodium perborate, 25% aq., 100 lbs. bgs. or more, l.o.b. plant..... | lb. | 63 1/4 | - |
| 55-60 bgs. same basis..... | lb. | 62 | - |
| Sodium phorboborate (see Phorboborate-acidum) | | | |
| Sodium phosphite, 35% aq., 100 lbs. bgs., c.i., works..... | lb. | 78 | - |
| Sodium phosphate, anhyd., dibasic tech., bgs., c.i., works, lrt. equiv. | 100 lbs. | 54.50 | - |
| food grade same..... | 100 lbs. | 57.50 | - |
| Sodium phosphate, monobasic, 100 lbs. same basis..... | 100 lbs. | 55.75 | - |
| food grade, same basis..... | 100 lbs. | 58.75 | - |
| tribasic, tech., same basis..... | 100 lbs. | 52.25 | 62.75 |
| food grade, same basis..... | 100 lbs. | 63.25 | - |
| chlorinated, same basis..... | 100 lbs. | 31.50 | - |
| cryst., tech., same basis..... | 100 lbs. | 30.50 | - |
| cryst., food grade, same basis..... | 100 lbs. | 35.50 | - |
| USP, dried, powd., bgs., dms., works..... | lb. | 10 | 20 1/2 |
| Sodium picramate, tech., paste, 200- lb. dms., dry bulk..... | lb. | 5.50 | - |
| Sodium propionate, dms., 2,000 lbs. or more, l.o.b. lrt. equiv..... | lb. | 54 | - |
| Sodium pyrophosphate, acid, tech., bgs., c.i., works..... | 100 lbs. | 56.25 | - |
| food grade, non-leaving, bgs., c.i., works, lrt. equiv..... | 100 lbs. | 61.25 | - |
| Sodium pyrophosphate, fenic, dms., c.i., l.i., works..... | 100 lbs. | 38.80 | - |
| Sodium pyrophosphate, 100 lbs. or more, anhyd., tech., bgs., c.i., l.i., works, lrt. equiv..... | 100 lbs. | 44.75 | - |
| bulk, hopper cars, same basis..... | 100 lbs. | 42.50 | - |
| Sodium silicofluoride, 100 lbs. or more, food grade, c.i., l.i., same basis..... | 100 lbs. | 53.00 | - |
| Sodium silicofluoride, USP, cryst., 200-lb. dms., 1,000-lb. lots or more, works, lrt. equiv..... | 100 lbs. | 3.00 | - |
| USP, powd., 200-lb. dms., 1,000-lb. lots or more, same basis..... | 100 lbs. | 3.05 | - |
| Sodium sulfolaurate, bulk, c.i., l.i., works..... | 100 lbs. | 170.00 | - |
| bgs., c.i., l.i., works..... | 100 lbs. | 195.00 | - |
| Sodium silicete, solid, or glass, 3.22- 3.25 ratio, bulk, c.i., l.i., works..... | 100 lbs. | 15.70 | - |
| bgs., c.i., l.i., works..... | 100 lbs. | 27.75 | - |
| 1.95-2.00 ratio, bulk, c.i., l.i., works..... | 100 lbs. | 20.30 | - |
| bgs., c.i., l.i., works..... | 100 lbs. | 22.15 | - |
| soin, 37.5° solid, 3.22-3.25 ratio, retio, bulk, c.i., l.i., lrt. equiv. | 100 lbs. | 8.30 | - |
| "Ratio" indicates percentage weight of Na ₂ O percentage by weight of Na ₂ O, divided by weight of SiO ₂ , divided by 100 | | | |
| Sodium silicofluoride, bgs., c.i., l.i., works..... | 100 lbs. | 17.95 | 19.75 |
| Sodium sulfate, dms. with 25% E.A. works..... | lb. | N.A. | - |
| Sodium sulfate, NF XII, powd., dms., 2,000-lb. lots..... | lb. | 22 | - |
| tech., detagret, rayon-grade, c.i., works, 500-lb. lots..... | lb. | 23 1/4 | - |
| Sodium sulfate, West, bulk, c.i., works, lrt. equiv..... | ton | 90.00 | 98.00 |
| bulk, c.i., East, same basis..... | ton | 90.00 | 101.00 |
| Sodium sulfate, photo grade, 100 lbs. bgs., c.i., works..... | ton | 113.00 | 114.00 |
| Sodium sulfite, flake, 70-72%, dms., c.i., works, lrt. equiv..... | ton | 500.00 | - |
| lq., 44-45%, tank, works, lrt. equiv. | ton | 500.00 | - |
| Sodium sulfite, flake, dms., c.i., works, E, lrt. equiv..... | ton | 470.00 | - |
| bgs., same basis..... | ton | 410.00 | - |
| Sodium sulfite, fused, dms., c.i., works, E, lrt. equiv..... | ton | 240.00 | - |
| Sodium sulfite, anhyd., tech., 85-90% bgs., l.o.b. works..... | 100 lbs. | 23.76 | - |
| Sodium sulfite, anhyd., CP (see Sodium thioacetate) | | | |
| Sodium tetraborate (see Borax) | | | |
| Sodium tetraborate (lq. 34% dms., c.i., works, lrt. equiv..... | lb. | 540.00 | - |
| Sodium thioacetate, purf., cryst., 250- lb. dms., 5 dms. or more, l.o.b. works..... | lb. | 3.28 | - |
| tech., anhyd., dms., 2,000-lb. lots or more, works..... | lb. | 97 | - |
| Sodium thioacetate, tech., photo-grade, anhyd., 100-lb. bgs., c.i., l.i., works, lrt. equiv..... | 100 lbs. | 45.50 | - |
| cryst. pentahydrate, c.i., l.i., same basis..... | 100 lbs. | 28.90 | - |
| Sodium titanate, dms., c.i., works..... | lb. | 14 1/4 | - |
| Sodium trichloroacetate, 80%, 100 lbs. bgs., c.i., l.i., works..... | lb. | 28 | - |
| Sodium tripolyphosphate, tech., bgs., c.i., l.i., works, lrt. equiv..... | 100 lbs. | 39.75 | - |
| bulk, hopper cars, same basis..... | 100 lbs. | 37.50 | - |
| food grade, bgs., c.i., l.i., same basis..... | 100 lbs. | 46.50 | - |
| Sodium tungstate, tech. high molty, dms., 10,000 lbs. or more, l.o.b. works..... | lb. | 5.00 | 5.50 |
| Food grade dms., 10,000 lbs. or more, same basis..... | lb. | 8.00 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 19 | - |
| tech., anhyd., purf., works, lrt. equiv. | lb. | 19 | - |
| Sodium-arsenodim phosphate, purf., cryst., dms., works..... | lb. | 62 | - |
| Sodium-(gamma)dimethyl aulfoxyacetate, dms., l.i., l.o.b. works..... | lb. | 91 | - |
| Sodium-thionyl sulfate, dms., 1,000- lb. lots or more, l.o.b. works..... | lb. | 28 | - |
| Sodium-th | | | |

| WEEK ENDING DEC. 19, 1986 | | |
|---|----------|---------|
| Sorbitol monosaccharate, dms., c.i., l.i., 30.000 l.b. min., f.o.b. works. | lb. | .76 |
| Sorbitol tetrasaccharate, l.i., 30.000 l.b. min., f.o.b. works. | lb. | .80 |
| 90ritol, USP, reg. 70% aqueous, dms., c.i., f.o.b. shipping point. | lb. | .35 |
| tanks, f.o.b. shipping point. | lb. | .30 |
| gran. dms., c.i., l.i., works. | lb. | .70 |
| powd. dms., c.i., l.i., works. | lb. | .68 |
| Soybean meal (See Oils, Fats & Waxes market report.) | | |
| Soybean oil acidulated, soapstock, 85% acid, tanks, New York lb. | lb. | .14 |
| Soybean oil, acid, del., dms., l.b. | lb. | .46 |
| tanks. | lb. | .43 |
| a.d., dms. | lb. | .47 |
| tanks | lb. | .38 |
| Spermidine, dms. | lb. | 2.50 |
| Sperminol of Chinese, 60%. | lb. | 5.50 |
| China, 80%. | lb. | 8.00 |
| Fair West, native | lb. | 9.00 |
| F. & W. Scotch | lb. | 16.00 |
| Spruce oil, dms. | lb. | 8.00 |
| St. John's bread, oil/bio, lbs. | lb. | .29 |
| Stennic chloride, anhyd., dms., | lb. | N.A. |
| Stennic oxide, dms., works. | lb. | N.A. |
| Stannous chloride, anhyd., dms. wks. | lb. | N.A. |
| Stannous fluoride, liq., conc. dms. | lb. | 2.50 |
| l.i., works, lrt. equals. | lb. | N.A. |
| Stannous oxide, dms., works. | lb. | N.A. |
| Stannous sulfate, dms., works. | lb. | N.A. |
| Stearic acid, double pressed, bulk | lb. | .26 |
| single-pressed, bulk | lb. | .25 |
| triple-pressed, bulk | lb. | .26 |
| Stemolium leaves, bgs. | lb. | .15 |
| Streptomycin sulfate, USP, bulk. | lb. | 47.00 |
| Stribromate carbonate, glass grg. bgs. | lb. | |
| works. | lb. | .37 1/2 |
| Strontium nitrate 50-15 bgs. c.i. works | lb. | 100lbs |
| Styrene monomer, 99.8% min. l.i., f.o.b. works. | lb. | 51.50 |
| Styrene-acrylonitrile resin, nat. bulk | lb. | 23 |
| oil plant | lb. | .77 |
| cryst. bulk, same basis | lb. | .77 |
| same basis | lb. | .77 |
| Styrol acrylate, dms. | lb. | .35 |
| Succinic acid, purif., cryst. dms., l.i. | lb. | |
| lrt. eqd. | lb. | 2.00 |
| Succinic anhydride, dms., c.i., l.i., works. | lb. | 1.71 |
| Sucrose, old, white, bgs. c.i. f.o.b. refly. E. | lb. | 100lbs |
| Sucrose acacia, isobutylate, 90% dms., l.i., divd. | lb. | 1.18 |
| tanks, divd. | lb. | 1.10 |
| 100%, dms., l.i., divd. | lb. | 1.18 |
| Sucrose aceto-acids, distilling grade, 100-lb. dms. f.o.b. works | lb. | 12.50 |
| Sulfabenzamide, dms., 500 kilos. | lb. | 39.50 |
| Sulfabenzamide-sodium, dms., 500 kilos. | lb. | 25.00 |
| Sulfacetamide, USP, dms., 500 kilos. | lb. | 20.00 |
| Sulfadiazine, USP, powd. dms., 500 kilos. | lb. | 53.00 |
| Sulfadiazine-sodium, USP, dms., 500 kilos. | lb. | 40.70 |
| Sulfamerazine, USP, microcrystals, dms., 500 kilos. | lb. | 33.50 |
| USP, powd., dms., 500 kilos. | lb. | 32.00 |
| Sulfamethazine-sodium, USP, powd. dms., 50 kilos. | lb. | 13.00 |
| Sulfamethazine, powder, dms., 500 kilos. | lb. | 9.00 |
| Sulfamic acid, cryst. bgs., c.i., l.i., acids. | lb. | 38.00 |
| Sulfamic acid, dms., c.i., l.i., works. | lb. | .38 |
| Sulfanilamide, NF, reg. 1,000-lb. dms., lrt. eqd. | lb. | .20 |
| Sulfanilic acid, tech., bgs., l.i., f.o.b. works. | lb. | .57 1/2 |
| Sulfazinoxaline, veterinary, grade, dms. | lb. | |
| Sulfur, crude, bright, molten, dms. bgs. vessels, Gulfports | long-ton | 118.00 |
| l.o.b. l.i. refly. | long-ton | 120.00 |
| Houma, La., 100 lbs. bgs. | long-ton | 120.00 |
| ext. terminals, Rotterdam | long-ton | 135.00 |
| U.S. tanks, Alberta, Canada, for US delivery | long-ton | 90.00 |
| dark - Tampa, Fla. | long-ton | 162.50 |
| Tampa price subject to \$10 per long-ton discount most customers. | | |
| Sulfur, crude, 99.5% min. purity, cont. flour, 60-lb. bgs., c.i., mines basis | lb. | 13.80 |
| lump, same basis | lb. | 13.50 |
| Sulfur, refld, 99.5% min. purity, rolls 60-lb. bags, c.i., mines basis | lb. | 17.50 |
| flour, light, 60-lb. bgs., same basis | lb. | |
| Sulfur, mid., sulfur, 98.5% min. purity, 50-lb. bgs., c.i. mines basis | lb. | 20.00 |
| Sulfur, rubbersmokers, 99.5% min. purity, cont. reg. 60-lb. c.i., mines basis | lb. | 14.80 |
| fine, 99% min. pressing through 325 mesh, same basis | lb. | 15.50 |
| Sulfur dioxide, dms., c.i., works, lrt. eqd. | lb. | .24 |
| tanks, same basis | lb. | .17 1/4 |
| Sulfur dioxide, liq. bulk, f.o.b. l.i., f.o.b. works | lb. | 230.00 |
| Sulfur monochloride, dms., c.i., works, lrt. eqd. | lb. | .22 1/2 |
| tanks, same basis | lb. | .16 1/4 |

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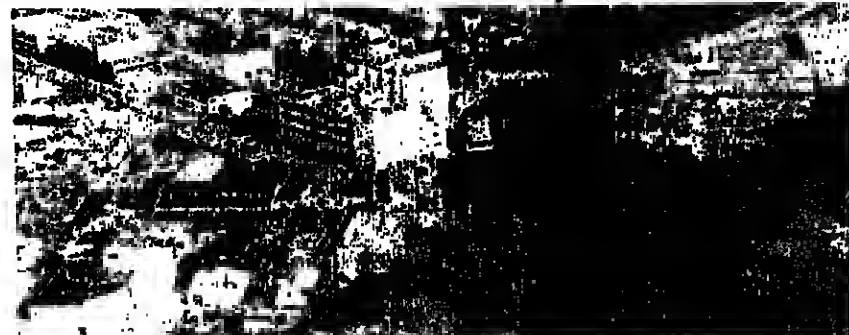
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48"x24", 40"x24" SHARPLES HYDRAULIC DRIVE (5)

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DOUBLE CONE VACUUM SYSTEMS: DEDTICH G/L, 80 CU. FT.
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ROTARY VAC. DRYERS SS & CS: 125, 100, 80, 60, CU. FT.
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VARIOUS SIZES & MATERIALS OF CONSTRUCTION

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FILTER PRESSES: ETEL PRESSURE LEAF (8)
STAR 18" DIA., 19 & 21 CHAMBERS, SS
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VACUUM BELT EXTRACTORS: 2 EIMCO 2'x12", 316SS VAC. BELT FILTER SYSTEMS
40 FILTER PRESSES 42" 43" 48" 58" POLY PRO, R/L CAST IRON
4 PASSAVANT MDL. 200 VAC-U-PRESS BELT FILTERS, 250 SQ. FT. FILTER AREA

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FIRE PREVENTION EQUIPMENT... MIXERS... PUMPS...
DISTILLATION EQUIPMENT

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BAUERMEISTER TURBOMILL, 40 HP, COMPLETE SYSTEM
FITZPATRICK MDL. D6 & D40 7.5 HP COMMINUTORS
ENTOLETER MILL 5 HP, MDL. M112G1-23

REACTOR SYSTEMS

GLASS LINED: (1) 3,000, (7) 2,000, (22) 1,000, (8) 500, (2) 300 (1) 200, (1) 130, (4) 100,
(4) 50, (1) 30, GALLON

ALL REACTORS EQUIPPED WITH TW DRIVES, MECHANICAL SEALS MANY WITH
VARIABLE SPEED DRIVES, GLASS, RECEIVERS & GRAPHITE HEAT EXCHANGER

STAINLESS STEEL: 318 & 318 LSS: (1) 4,000, (1) 3,000, (3) 2,000, (2) 2,000, (1) 1,300,
(2) 1,250, (9) 1,100, (8) 1,000, (7) 500, (2) 300, (1) 30, (1) 10 GALLON

11 SS JKT. AGIT. KETTLE FROM 750 GAL. TO 5,000

TANKS/RECEIVERS

GLASS LINED RECEIVERS & CHEMSTORS
(2) 2,000, (1) 1,000, (1) 500, (4) 250, 100, (2) 50 GALLON

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(1) 5,000, (1) 4,000, (1) 3,000, (6) 2,000, (3) 1,500, (4) 1,000, (1) 800, (7) 500,
(1) 300, (3) 250, (5) 200, (1) 150, (3) 100, (3) 50 GALLON

TANK FARMS

GLASS LINED: (2) 10,000, (1) 5,000, (2) 2,000 GALLON
STAINLESS STEEL 318SS & 318LSS: (10) 10,000, (1) 8,000, (3) 7,500, (2) 8,000,
(3) 5,000 (3) 4,000 GALLON

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3,000 GAL. 318 SS 60/30 HP AGIT. 100 PSI INT. W/COILS (4)

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2,000 GAL. 316 L SS, 75/200 PSI JKT (2)

TANKS:

15,000 GAL. 316 LSS AGIT. 10'x23'

5,500 (3), 3,000 (1) 2,200 (2), GAL. MONEL VERTICAL

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SS HEAT EXCHANGERS FROM 100 TO 500 SQ. FT.

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NEW 1976... COMPRISED OF TWO TRAINS... 60 ACRES OF LAND

AIR COMPRESSORS: 5,015 CFM @ 300 RPM, 250 HP (4)

BOILERS: 146,822,000 & 91,000,000 BTU/HR VERT. HOT OIL VAPORIZERS (4)

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REACTORS CS: 55,000 GAL. 701 PSI INT. (4)

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1,800 GAL., 500 PSI INT. (2)

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300,000 GAL., 40'x35', STEAM COIL

44,000 GAL., 20'x20' & 20,000 GAL. 14'x19'

12,500 GAL., 15'x8'x20' (2), 11,000 GAL. 250 PSI (3)

6,000 GAL., 10'x15' (2) & 2,000 GAL. 7'x8' (2)

24,500 GAL., R/L STORAGE TANKS 12'x28' (2)

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Triple effect evaporation system — Sodium Service two trains — 600
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TPH of product at 80#/cu. ft., bucket loading system designed to
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Wabash Equipment Company

CENTRIFUGAL COMPRESSORS

By Make, Model, and ACFM

| Model | ACFM | Model | ACFM | Model | ACFM |
|----------------|-------|----------------|-------|-----------------|-------|
| Allis Chalmers | | Clark (Cont'd) | | Ellott | |
| VT204 | 1315 | 3M5 | 5350 | 46M8-6 | 17300 |
| DH43 | 1890 | 3M3-2 | 5800 | 42H2 | 18453 |
| V-403 | 5900 | 2M8 | 5840 | Ingersoll Rand | |
| V-402 | 9110 | 24X24 | 8750 | MMGB-1220 | 170 |
| DH4M | 10400 | 3M-5 | 7608 | MMGB1321 | 232 |
| Brown Boveri | | 553B7 | 8361 | MGA733 | 1775 |
| VVO 809 | 20900 | 3H4 | 10620 | CVS-12 | 2015 |
| VW0809 | 21000 | 3M-8 | 10700 | TYPE L AXI | 2472 |
| V907BD | 34000 | 3H4 | 11950 | CDP-416 | 2540 |
| Carrier | | 3H4 | 11950 | CDP-416 | 2540 |
| 18VT352 | 3350 | 4H4 | 19365 | MGG833 | 2550 |
| 18P351 | 4180 | 4M3 | 20200 | MTG833 | 2810 |
| 18W453 | 4740 | M4 | 21600 | 900X20 | 2980 |
| 18W452 | 8270 | 4M8 | 21600 | TYPE L-AXI | 3510 |
| 18V470 | 7200 | 5H4 | 23850 | CH40M2 | 4220 |
| 18PM451L | 10700 | 4M | 25600 | MGG833 | 4730 |
| 18PM451Y | 12000 | 8H4 | 39100 | CVS14 | 5800 |
| 18WV502 | 17790 | 8H4 | 52180 | MGG8 | 7270 |
| 18S601 | 31900 | 8M3 | 58500 | MGA642 | 7500 |
| Cooper Bessmer | | 6M3 | 98300 | CVS-14 | 8750 |
| RB9-8B | 277 | DaLaval | 3260 | CVS-14 | 9380 |
| RB9-8B | 445 | 2C | 5980 | MGA-177 | 36150 |
| RB9B | 1048 | 6C148 | | MMA-3100 | 54200 |
| RB6B | 3448 | Damag | | MMA-4100 | 57750 |
| RC8B | 3525 | VK83 | 45100 | Joy | |
| RF2B24 | 13100 | Ellitt | | TA25V | 2440 |
| RE7S | 18773 | 29M-9 | 3055 | TA-30 | 3280 |
| RE8-7S | 30000 | 29MS-9 | 3055 | TA-30 | 3280 |
| Clark | | 18HV470 | 3360 | GMSG12 | 1088B |
| 1M8 | 550 | 29MS9-8 | 4390 | Rotoflow | |
| 1M5 | 1110 | 29MS9-81 | 4390 | 60K | 6755 |
| 1M9-8 | 1477 | 29MS9-8 | 4390 | Worthington | |
| 1M9-8 | 1477 | 29M7 | 4750 | GUR-3S6 | 3980 |
| 2B | 1611 | 29MS8-7 | 4750 | GUR-4K2 | 7050 |
| 2M9 | 1968 | 40P | 6610 | VC706 | 1130 |
| 2M-7 | 2223 | 29M3 | 7093 | DEMAG | 2400 |
| 3M6 | 2403 | 38M8-41 | 7450 | 23268A | 2B3 |
| 2M7 | 2490 | 38M2 | 9481 | CALL JACK BURCH | |
| 1M8 | 2575 | 38M3-2 | 10700 | 713/471-4900 | |
| 2BF8 | 3221 | 18P452 | 14000 | | |

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RATES/Classified Ads: \$57.75 for 36 words or less; \$9.75 for each additional six words or fraction. No display. First two words printed in bold face type.

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CHEMICAL IMPORTS

Continued from Page 27

PMOETA Hemisph. Kerner 40 dms (16184 lbs) (Kiso Maru) Kobe, 11/13.
POLY ABS HESIN Lip Transport 69 pkg (39846 lbs) (Ace Accord) Katsung, 11/12.
POLYETHYLENE Methylol 68 pkg 30060 bgn (1558478 lbs) (American Apollo) Buenos Aires, 11/10.
POLYETHYLENE GLYCOL 400 2 csk (1012 lbs) (Clarence) Rotterdam, 11/8.
POLYETHYLENE Pan American Container 7 ca (10692 lbs) (Amudena) Genoa, 11/7.
POLYETHYLENE GLYCOL POLYMERS Sumiomo of America 144 dms (17778 lbs) (McKinney) Mersa, 11/7.
POLYURETHANE GRANULES Pel Product 18 bin (40588 lbs) (Atlantic Conveyor) Liverpool, 11/8.
485 aka (0 lbs) (Sea Land Express) Rotterdam, 11/14.
POLYVINYL ALCOHOL Maruti America 300 bgs (40588 lbs) (McKinney) Mersa, 11/7.
POLYVINYL CHLORIDE Enrich 800 bgs (45004 lbs) (Amudena) Leghorn, 11/8.
POPPY SEEDS India Store 5 pkg (228 lbs) (Hoegh Danaos) Bombay, 11/18.
POPPYSEEDS Schil Food Products 1000 bgs (55115 lbs) (Eaton) Izmir, 11/10.
POTASSIUM CARBONATE T F America Chemicals 520 bgs (0 lbs) (Sea Land Express) Rotterdam, 11/14.
POTASSIUM CHLORIDE Penelope 1 bxs (118 lbs) (American Georgia) Bremenhaven, 11/10.
POTASSIUM CYANIDE Montedison 180 dms (19385 lbs) (Export Petrol) Leghorn, 11/15.
POTASSIUM DICHROMATE American Chrome & Chemicals 15 bin (45308 lbs) (Clarence) Rotterdam, 11/10.
POTASSIUM METABISULFATE 242 pkg (27558 lbs) (Sea Land Express) Rotterdam, 11/14.
POTASSIUM PERMANGANATE American Int 380 dms (43475 lbs) (American Georgia) Rotterdam, 11/10.
POTASSIUM PERBOLATE Mitsubishi Int 840 bgs (35697 lbs) (Ming Sun) Yokohama, 11/12.
POWDERED HORSERADISH JFC Int 10 ctn (0 lbs) (Ming Sun) Yokohama, 11/12.
New York Mutual Trdg 178 ctn (0 lbs) (Ming Sun) Yokohama, 11/12.
POWDERED WATTLE MIMOSA EXTRACT Bakery Int 4800 bgs (284554 lbs) (American Georgia) Rotterdam, 11/10.
PROCAINE PENICILLIN G NON STERIL American Cyanamid 200 dms (23510 lbs) (Kiso Maru) Nagoya, 11/13.
PSYLLUM SEED HUSK POWDER Rowell Laboratories 380 dms (41789 lbs) (Hoegh Danaos) Bombay, 11/18.
PSYLLUM SEEDS Meer 216 bgs (36980 lbs) (Addiyah) Dubai, 11/18.

EQUIPMENT OFFERED

Process Equipment for Sale: Baker Perkins Ter-Mer centrifuge 3165, 5/ton/hour capacity with hydraulic push for unloading. Aromatic fluid bed dryer 3165S, 200 lb/hour capacity. Baltimore air-cool cooling tower 126 ton. 861-7703.

POSITIONS OFFERED

Chemical Sales Aggressive chemical distributor currently has high potential sales position available in N.J. Minimum 2-3 yrs. chemical sales experience with good customer following, familiarity with the industrial chemical line and technical sales required. We offer competitive compensation — terrific opportunity. Send resume to CMR 755.

Dynasol, Growing chemical company in N.J. are looking for a sales representative for N.J. territory. Chemical distributor selling experience, college degree preferred. Salary, commission, company car, full benefits all company paid. Excellent growth opportunity. Pls submit your resume in confidence to CMR 755.

REPRESENTATIVES WANTED

Distributors — Food Ingredients — Established importer of Gum Gaur and food-grade materials wishes to establish and user supply system through regional distributors. Contact CMR 757.

SERVICES OFFERED

Custom solids packaging and distribution in the port of Mobile. Multi-wet bags, bulk bags, drums and bulk. Screening, repackaging and warehousing. Rail and truck facilities. Contact: Philip Hahn, SEAPAC, Bldg. 14A, Brookley Complex, Mobile, AL 36615, 205/433-3541.

R-5

RARE EARTH CHLORIDE Nishio Iwai American 600 dms (2403020 lbs) (American New York) Kobe, 11/10.
RHODAMINE B BASE Datal 10 dms (1228 lbs) (Hoegh Danaos) Bombay, 11/18.
SAGE LEAVES Ludwig Muller 341 bgs (11277 lbs) (Eaton) Izmir, 11/10.
McMick 582 bgs (11038 lbs) (Eaton) Izmir, 11/10.
Morris J. Golombek 84 bgs (1023 lbs) (Eaton) Izmir, 11/10.
SAGO SEEDS Bheri Saezer 25 bgs (2811 lbs) (Hoegh Danaos) Bombay, 11/18.
SILICA GROUND Enron 158 bgs (26138 lbs) (American Georgia) Rotterdam, 11/10.
SILICA POWDER Kuehne & Nagel 20 uni (45371 lbs) (Ocean Legend) Yokohama, 11/17.
SODIUM AMMONIUM VANADATE 80 bgs (37698 lbs) (American Georgia) Rotterdam, 11/10.
SODIUM BENZOATE FLAKES American Int Chemical 360 bgs (46184 lbs) (Eaton) Izmir, 11/10.
SODIUM CHLORIDE Degussa 238 dms (44588 lbs) (Dart) Bristol, Bremenhaven, 11/12.
SODIUM CHLORIDE FORMULA A T F America Chemicals 63 dms (0 lbs) (Sea Land Express) Rotterdam, 11/14.
SODIUM DICHLORO S TRIAZINETRONE Olin 118 dms (34078 lbs) (Eaton) Izmir, 11/10.
SODIUM ERYTHROBATE PMP Fermentat Products 320 dms (80866 lbs) (Ming Sun) Kobe, 11/12.
SODIUM HEXAMETAPHOSPHATE 18 bgs (35489 lbs) (American New York) Kobe, 11/10.
Organic Specialty 350 bgs (58735 lbs) (American New York) Kobe, 11/10.
SODIUM HYPOPHOSPHITE MONOHYDRATE 124 dms (141204 lbs) (Addiyah) Fok, 11/18.
SODIUM METHYLATE Maruti Phoenix Transport 1 dms (0 lbs) (Sea Land Express) Bremenhaven, 11/14.
SODIUM PERBORATE TETRAHYDRATE Degussa 420 bgs (42488 lbs) (American Georgia) Rotterdam, 11/10.
SODIUM PERDIOXIDE Penelope 5 bxs (143 lbs) (American Georgia) Bremenhaven, 11/10.
SODIUM PERSULFATE Mitsubishi Int 1280 bgs (1384 lbs) (Ming Sun) Yokohama, 11/12.
SODIUM PERBOLATE Degussa 20 bgs (42858 lbs) (Sea Land Express) Bremenhaven, 11/14.
SODIUM THIOSULPHATE 880 bgs (37778 lbs) (Ace Accord) Hong Kong, 11/12.

Custom & Contract Industrial Materials & Chemicals

Call (201) 267-8888

SODIUM TRIPHOSPHATE Advent Chemical 483 bgs (48008 lbs) (Clarence) Rotterdam, 11/8.
580 bgs (587906 lbs) (Clarence) Rotterdam, 11/8.
SULFAMETHOXAZOLE Shingor 84 dms (110186 lbs) (McKinney) Mersa, 11/7.
SULFURYL CHLORIDE 1 ink (40344 lbs) (Eaton) Rotterdam, 11/17.

T-Z

TANGERINE Oil Intiran 22 dms (9884 lbs) (Rouen) Rotterdam, 11/13.
TARTARIC ACID POWDER Tartaric Chemicals 620 mtk (45885 lbs) (Amudena) Genoa, 11/8.
TEAK Oil Scandinavian Design 45 pkg (1180 lbs) (Clarence) Bremenhaven, 11/8.
TERPINEOL PERFORMERY E.L. Scott 29 dms (13971 lbs) (Amudena) Cadz, 11/9.
TETRAACETONE HYDROCHLORIDE 1 dms (121 lbs) (Rouen) Rotterdam, 11/13.
TETRAMETHYL GUANIDINE Degussa 18 dms (7718 lbs) (Eaton) Izmir, 11/10.
TETRAMETHYL THURAM DISULPHIDE Prochimie Int 788 bgs (43924 lbs) (Clarence) Rotterdam, 11/8.
THIOGLYCOLIC ACID Caratob 84 dms (41941 lbs) (Sea Land Express) Bremenhaven, 11/14.
THIONYL CHLORIDE Unifrol 2 ink (78748 lbs) (Eaton) Rotterdam, 11/17.
THYME LEAVES Herbert Mennorek & Sons 283 bgs (31195 lbs) (Ever Strong) Valencia, 11/17.
TITANIUM DIOXIDE RUTILE Rhone Potence 4800 bgs (264023 lbs) (Rouen) Le Havre, 11/13.
TITANIUM DIOXIDE Dar Tech 880 bgs (44137 lbs) (Sea Land Express) Algeria, 11/12.
Kronos Titan 32 pil (25540 lbs) (John M) Rotterdam, 11/8.
Lukens Chemical 580 bgs (44137 lbs) (Sea Land Express) Algeria, 11/12.
N. L. Inc 3200 bgs (180582 lbs) (American Georgia) Rotterdam, 11/10.
3200 bgs (15962 lbs) (Rouen) Rotterdam, 11/13.
TOLUENE DIISOCYANATE Montedison 72 dms (43016 lbs) (Export Petrol) Leghorn, 11/15.
TOLUENE METHYL ETHER, KETONE, MINERAL, SPIR American Fuji Sent 17 csk (1517 lbs) (McKinney) Mersa, 11/7.
TRIALLYL ISOCYANURATE Correl & Onal 40 dms (13985 lbs) (Ming Sun) Yokohama, 11/12.
TRICHLOROETHYLENE CHLORIDE 1 bgs (39833 lbs) (Amudena) Bilbao, 11/8.
TRIMETHYLCYCLOHEXANOL Nuodex 70 dms (38321 lbs) (Clarence) Rotterdam, 11/13.
TRIPHENYL PHOSPHITE Mercurio 540 bgs (38773 lbs) (Rouen) Rotterdam, 11/13.
TURKISH LAUREL LEAVES William E Martin 241 bgs (26455 lbs) (Addiyah) Fok, 11/18.
TURKISH OREGANO LEAVES 1259 bgs (25203 lbs) (Addiyah) Fok, 11/18.
TUMERIC FINGERS McCormick 240 bgs (33492 lbs) (Hoegh Danaos) Coshin, 11/18.
TYLOSE MHB 18 bgs (1065 lbs) (Clarence) Rotterdam, 11/8.
ULTRAMARINE PIGMENT Whitaker Clark & Daniele 720 bgs (41310 lbs) (American Georgia) Rotterdam, 11/10.
WINGGREEN OIL NATURAL Rorje 80 ckt (8488 lbs) (Yellow) 2 ckt (87941 lbs) (Eaton) Rotterdam, 11/17.
YELLOW CARNAUBA WAX FLAKES Frank & Ross 440 bgs (44484 lbs) (Hoegh Danaos) Fortaleze, 11/11.
Robert S. Baldini 440 bgs (44484 lbs) (Hoegh Danaos) Fortaleze, 11/11.
YELLOW DYE STUFF Livingston Int Freight 20 dms (2447 lbs) (Addiyah) Dubai, 11/18.
YERBA MATE Goya Foods 450 ctn (21925 lbs) (American Georgia) Buenos Aires, 11/10.
ZINC CYANIDE Fik Chemical 178 dms (20082 lbs) (Ming Sun) Kobe, 11/12.

Dow Is Bullish

Continued from Page 3

dust consolidation will help producers avert the excesses of 1974 and 1978," he said. Those producers who remain, he explained, will be those who custom-design products to end-user needs. Adequate supplies of raw materials will be needed to weather hydrocarbon pricing cycles, and the ability to move quickly between feedstocks will be crucial. In this competitive market-

place, he says, viewing plastics as a raw material outlet can only ensure failure.

To reinforce its position in the polyethylene and polystyrene markets, Dow is planning expansions. By the end of next year, the company will have 335 million pounds of HDPE capacity in the US, 875 million pounds in the rest of the world. Its LDPE capacity will total 845 million pounds in the US and 1930 million pounds in other countries, while "Dowlex" LDPE capacity will reach 850 million pounds in the US and 1380 million in the rest of the world.

Three "Dowlex" LDPE expansions are currently in progress, Mr. Shobe says. At the company's Freeport, TX, plant, three incremental expansions, the first of which is now complete, will add another 118 million pounds of capacity by the end of 1987. By the 3rd quarter next year, 120 million pounds of capacity will be added at Dow's Plaquemine, LA, plant. Additional capacity is slated for Dow's Netherlands plant by the 2nd quarter of 1988.

By 1991, the firm's capacity for HDPE should total 675 million pound, 335 million pounds of it in the US; capacity for LDPE should total 1985 million pounds (645 million pounds of it in the US), and that for LLDPE will total 2120 million pounds, 1400 million pounds of it in the US.

EXPANSIONS IN CAPACITY

Next year, incremental expansions in Midland and Joliet will add another 200 million pounds of polystyrene capacity to Dow's total of 800 million.

Dow sees the need for a new "Styron" plant, to replace some current capacity. Plans are still in the proposal phase, but, when added, the new facility could bring Dow's polystyrene capacity in the US to 1,171 million pounds by 1991.

Among the products targeted for high growth this year are "Styron XL," high impact polystyrene, "Styron LR-175" and "Styron APR" general molding polystyrene.

The starting products in Dow's polyolefins line are "Aspun" fiber-grade resin and "Dowlex ULDFE," "Aspun," said to be softer than both polypropylene and PET fiber, shows better wettability than either, and superior barrier properties to EVA resins in some applications. Unlike these plastics, it can be thermally bonded to polyethylene film, eliminating the need for expensive adhesives. It can withstand exposure to gamma ray sterilization, important now that this has become the standard process.

The product will offer consumers a 20 to 50 percent cost savings, Mr. Shobe stated is expected to find secure market niches in the disposable medical products, diaper, and personal care markets, where demand next year could reach 750 million pounds.

"Dowlex ULDFE," so far the only olefin comonomer ultra low density polyethylene available on the US market, is said to outperform butene-comonomer VLDPE in strength and flexibility.

SPECIALS

Hull 400 & 100, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000, 1050, 1100, 1150, 1200, 1250, 1300, 1350, 1400, 1450, 1500, 1550, 1600, 1650, 1700, 1750, 1800, 1850, 1900, 1950, 2000, 2050, 2100, 2150, 2200, 2250, 2300, 2350, 2400, 2450, 2500, 2550, 2600, 2650, 2700, 2750, 2800, 2850, 2900, 2950, 3000, 3050, 3100, 3150, 3200, 3250, 3300, 3350, 3400, 3450, 3500, 3550, 3600, 3650, 3700, 3750, 3800, 3850, 3900, 3950, 4000, 4050, 4100, 4150, 4200, 4250, 4300, 4350, 4400, 4450, 4500, 4550, 4600, 4650, 4700, 4750, 4800, 4850, 4900, 4950, 5000, 5050, 5100, 5150, 5200, 5250, 5300, 5350, 5400, 5450, 5500, 5550, 5600, 5650, 5700, 5750, 5800, 5850, 5900, 5950, 6000, 6050, 6100, 6150, 6200, 6250, 6300, 6350, 6400, 6450, 6500, 6550, 6600, 6650, 6700, 6750, 6800, 6850, 6900, 6950, 7000, 7050, 7100, 7150, 7200, 7250, 7300, 7350, 7400, 7450, 7500, 7550, 7600, 7650, 7700, 7750, 7800, 7850, 7900, 7950, 8000, 8050, 8100, 8150, 8200, 8250, 8300, 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CHEMICAL PROFILE

SODIUM SILICATES

December 22, 1986

| SUPPLY | CAPACITY* |
|--------------------------------------|-----------|
| PRODUCER | |
| Chemical Products, Cartersville, Ga. | 15,000 |
| Du Pont (4 sites) | 105,000 |
| Engelhard, Allentown, Pa. | 7,000 |
| Ethyl, Pasadena, Tex. | 100,000 |
| Grace, Lake Charles, La. | 65,000 |
| J.M. Huber (2 sites) | 100,000 |
| Mayo Products, Mableton, Ga. | 25,000 |
| Occidental (7 sites) | 250,000 |
| PPG (2 sites) | 110,000 |
| PQ (12 sites) | 420,000 |
| Stauffer (2 sites) | 70,000 |
| Z-Tech, Bow, N.H. | 1,000 |
| Total | 1,266,000 |

*Short tons per year, anhydrous glass beads. Du Pont has announced it will sell three production sites to Power International Ltd., Melbourne, Australia, by the end of 1986. Du Pont will keep its East Chicago plant for captive requirements. J.M. Huber's second site, at Hevra De Grace, Md., will come on stream in early 1987. Occidental acquired Diamond Shamrock's chemicals business in August 1986. Stauffer's parent company, Chesebrough-Pond's is being acquired by Unilever NV. Z-Tech, a subsidiary of ICI Australia, was acquired from Farro Corporation in September 1986. CPC, Du Pont, Occidental and PQ are merchant sodium silicate producers. Z-Tech and Engelhard sell byproduct in the merchant market. Ethyl, Grace, Huber and PPG consume all product captive in pigment and catalyst production. Mayo and Stauffer make only sodium metasilicates; CPC, Occidental and PQ also make metasilicates. Profile last published 12/28/83; this revision, 12/22/86.

DEMAND
1985: 740,000 tons; 1986: 740,000 tons; 1990: 800,000 tons.

GROWTH
Historical (1976-1985): 0.5 percent per year; future: 1 to 2 percent per year through 1990.

PRICE
Historical (1952-1986): High, \$6.30 per 100 pounds, 40.6 to 41.6 degrees Baume, 3.22 to 3.25 ratio, tanks, frt. equid.; low, 90c. per 100 pounds, same basis. Current: \$6.30 per 100 pounds, same basis; \$15.70 per 100 pounds, 3.22 to 3.25 ratio, 100 percent (solid), frt. equid.

USES
Soaps and detergents, 29 percent; silice-type catalysts and gels, 26 percent; pigments, 22 percent; water, paper and ore treatment, 6 percent; paper adhesives, 5 percent; roofing granules, 4 percent; other, 6 percent.

STRENGTH
Refinery fluid catalyst demand is up as oil refiners look to increase octane yields in the face of lead phase-down and lower gas prices. New techniques in waste-water treatment are creating silicate demand as a binding agent.

Continued on Page 45

Glaxo Unveils A New Agent For Disorder

A new compound under development by Glaxo Holdings Plc of the UK has the potential to improve the treatment of such disorders as schizophrenia and anxiety, the company reported Friday (December 19) at a meeting of the British Pharmacological Society in London. Glaxo also said the compound might be used to control the nausea and vomiting associated with anti-cancer treatment. Glaxo stressed that the compound is still at a very early stage of development. Human clinical trials over the next five years should reveal the full extent of the advance in therapy represented by the compound, the company said.

BLOCKS DOPAMINE RECEPTORS
Glaxo said the drug works by blocking certain receptors in the brain, resulting in the modulation of other major neurotransmitter systems that affect various physiological functions.

According to Glaxo, animal studies have shown that the compound can control the dopaminergic overactivity in the brain which is thought to be responsible for the symptoms of schizophrenia. This is accomplished without the drug affecting normal behavior, Glaxo says.

The sedative and movement side effects of current drug treatments are unlikely to be seen with the Glaxo compound, the company adds.

Schizophrenia, a disabling disorder involving loss of contact with reality, affects up to 1 percent of the population. Its cause is still unknown.

Velsicol Buyout Is Complete; Terms Unknown

Management of Velsicol Chemical Corporation have completed the buyout of the pest control and specialty chemicals firm from Farley Industries. Financial terms have not been disclosed.

Arthur R. Sigel, head of the five-member executive team purchasing Velsicol, will serve as president and chief executive officer. He said the timing of the buyout is "ideal" for the management group.

"There has been significant investment at Velsicol during the past four to five years towards growth," he said. "The foundation for this growth has been laid by our management group, so we are pleased to be able to assume full direction of the company at a time when Velsicol is on the verge of realizing some major goals." Joining Mr. Sigel in the purchase are Lawrence M. Hartman, executive vice-president; Charles H. Frommer, vice-president of regulatory, government and public affairs; David M. Frederick, vice-president of sales and marketing; and Charles R. Hanson, vice-president of environmental management.

Velsicol introduced a new rodenticide, "Vengeance," to the professional pest control industry in September 1986. The company has also just announced it will be adding another soil termiticide to its product line in 1987.

DETAILS UNDISCLOSED
While unable to disclose details at this time, Mr. Sigel said Velsicol expects to make additional announcements regarding new pest control and specialty chemicals products. Progress on new products will not be disrupted by the change in ownership, he said.

"The management team is very pleased that so many of Velsicol's professionals have chosen to remain with company," Mr. Sigel said. "We are a tight, compact group that used to working together. And we are excited about the future of Velsicol and confident in our abilities," he said.

Mr. Sigel said Velsicol will employ nearly 500 people, including field sales personnel and workers at four manufacturing plants, located at Marshall, Ill., Bayport, Texas, and at Memphis and Chattanooga, Tenn.

Velsicol also maintains six international offices for sales and service: Sydney, Australia (Australia and New Zealand), Tokyo, Japan (Japan and Korea), Sao Paulo, Brazil (Latin America), London, England (Western and Eastern Europe), Manila, Philippines (Southeast Asia), and Athens, Greece (Africa, India and the Middle East).

Cyro Producing Acrylic at Osceola

Cyro Industries has begun production of acrylic sheet at a new plant in Osceola, Ark. The \$25 million facility produces "Acrylic FF" continuously manufactured sheet used in window glazing, picture frames, signs, retail store displays and other applications.

The plant will also manufacture acrylic molding and extrusion compounds for use in automotive lighting lenses, lighting diffusers and other applications. These polymer-manufacturing facilities will be completed in mid-1987. When the facility is completed, Cyro will have a combined polymer and continuous sheet manufacturing capacity of 60 million pounds.

Cyro Industries is a partnership of subsidiaries of American Cyanamid Company and Rohm GmbH of West Germany. The company maintains its corporate headquarters in Woodcliff Lake, N.J., and conducts manufacturing operations at Fortier, La., and Wallingford, Conn. Cyro also operates an acrylic sheet manufacturing plant in Sanford, Maine.

JOBS & PEOPLE



Gary F. Weigert, who has been appointed vice-president of the Food Products Division at National Starch & Chemical Corporation. He will be responsible for food starch product and development and technical service.

Diversified Chemicals Appoints Two Managers

Diversified Chemicals & Propellants Company has appointed J.R. Fraunheim managing director of the company's new operation in Krefeld, West Germany, and Ron Duncan regional sales manager.

Mr. Fraunheim will continue in his position as vice-president of sales while moving to the Krefeld facility, a plant that will produce cosmetic grade hydrocarbon propellants for the aerosol industry and blowing agents for the foam industry.

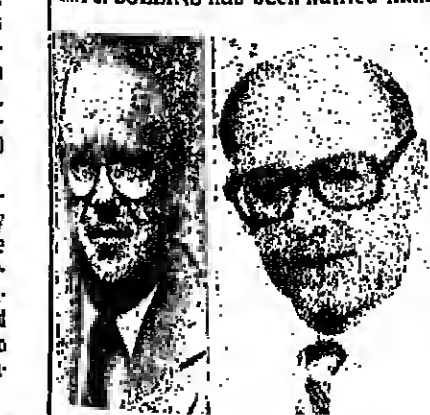
Prior to Mr. Duncan's association with Diversified, he had been involved in sales and marketing for Stauffer Chemical Company and Borden Chemical Company.



J.R. Fraunheim R. Duncan

Joseph E. Whalen has been appointed director of management systems for the Stauffer Company. ERNST A. COLEMAN has joined Norton Performance Plastics as a technology and manager of research and development. CHARLES R. McDONALD has been appointed regional marketing manager in the enhanced oil recovery department of Chevron Chemical Company.

RONALD BONNER has been named technical sales representative as the West Coast manager of Rohm and Haas Company's water treatment team. RONALD J. DAVIS has been appointed senior staff counsel and manager of the litigation section of Dow Chemical Company's legal department. MARY J. COLLINS has been named man-



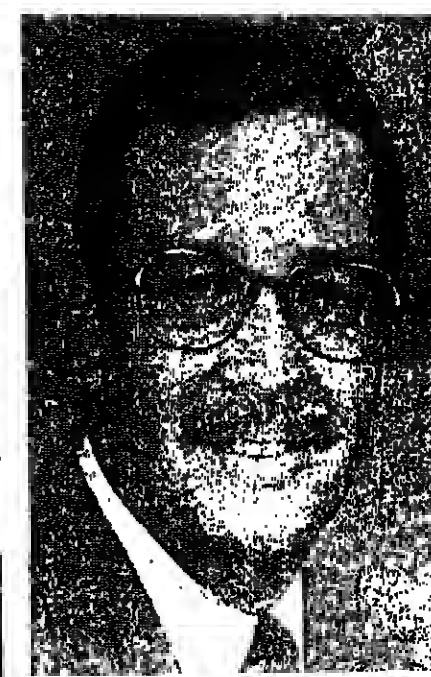
J.E. Whalen Dr. E.A. Coleman C.R. McDonald S.P. Gornar

ager of information systems for North America, a newly created position at Norton Performance Plastics. LAWRENCE B. COHEN has been elected executive vice-president of Cavendish Chemical Company.



C.R. McDonald S.P. Gornar

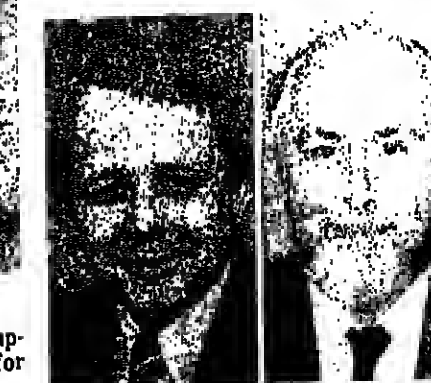
cal Company. J.D. BROOKS has been appointed director of sales and marketing for Pennwalt Corporation's Agchem Division. JOHN M. MOUNT has been named vice-



Gary F. Weigert, who has been appointed vice-president of the Food Products Division at National Starch & Chemical Corporation. He will be responsible for food starch product and development and technical service.

president of Chemed and elected a member of the company's board of directors. ANTHONY T. CASTOR III has been appointed president of Inland Specialty Chemicals Corporation, a wholly-owned subsidiary of Great Lakes Chemical Corporation. CARL R. CUTBERTSON has been named Southern district sales manager for Plmetex Inc., Elmwood Park, N.J.

ROLFE B. CHASE has been appointed vice-president of soda products manufacturing at Kerr-McGee Chemical Corporation's Seneca Valley, Calif., chemical complex. JOHN T. VANBUSKIRK, general manager of Phillips 66 Company's Plastics Division in Houston, has been selected to head all plastics operations for the firm, and J.R. BENZ, manager

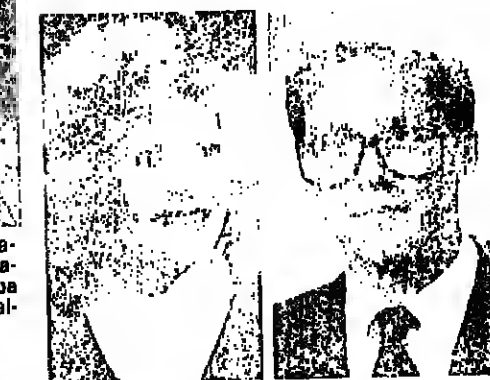


R.L. Davis B.J. Collins

ChemCentral Names Sales Representatives

ChemCentral Corporation has named Kristine Weigel sales representative for the Northern Milwaukee and Eastern Wisconsin territory and Henry Suwyn sales representative in the Grand Rapids, Mich., territory. Miss Weigel joined ChemCentral in Milwaukee in early 1986 and took her training there.

Mr. Suwyn trained for his sales representative position at ChemCentral's Grand Rapids office.



K. Weigel H. Suwyn

of chemicals and catalyst in Bartlesville, has been named plastics resins manager of the company's Houston chemical complex.

TOMAS F. SANTINI has been appointed vice-president of scientific affairs at de Laire Inc. RICHARD M. MUELLER has been appointed to the new position of director of licensing at Glaxo Inc. D.L. MANLOVE has been named director of food industry



L.B. Cohen J.D. Brooks

marketing for Betz Laboratories. JOHN DOHERTY has been elected vice-president for external affairs at National Starch & Chemical Corp.

MEETINGS CALENDAR

December 22, 1986

JANUARY

ASSOCIATION OF THE NON-WOVEN FABRICS INDUS-
TRY, third high level and fiber conference, Executive
Meritor Hotel, Charlotte, N.C., January 27-28.
CHEMICAL INDUSTRY ASSOCIATION, luncheon meet-
ing, Park Meriden Hotel, New York, January 28.
COMMERCIAL DEVELOPMENT ASSOCIATION, 9th an-
nual industrial commercial development course, with
Delphi Marketing Services, Inc., Sheraton Centre Ho-
tel, New York, January 28-29.
SOAP AND DETERGENT ASSOCIATION, 50th Annual
Meeting and Industry Convention, Boca Raton Hotel
and Club, Boca Raton, Fla., January 29-February 1,
1987.

LATER ON

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS,
center for chemical process safety, international con-
ference on chemical safety issues, Omni Shoreham
Hotel, Washington, D.C., February 3-5.

AMERICAN PETROLEUM INSTITUTE, 12th world
petroleum congress, international forum for exchange
of technical information about the petroleum industry,
Houston, Tex., April 26-May 1.

ASSOCIATION OF OFFICIAL ANALYTICAL CHEMISTS,
12th annual Spring workshop and exhibition, Skyline
Hotel, Ottawa, Ontario, Canada, April 27-30.

CHEMICAL GROUP OF NATIONAL ASSOCIATION OF
PURCHASING MANAGERS, mid-winter conference,
"Purchasing — Opportunity in a Changing World,"
Baton Rouge Hilton Hotel, Baton Rouge, La., Febru-
ary 18-20.

CHEMICAL MARKETING RESEARCH ASSOCIATION,
Houston Meeting: "The US Chemical Industry Re-
sponding to Change," Waltham Hotel, Houston
Tex., February 4-5, 1987.

CHEMICAL SPECIALTIES MANUFACTURERS ASSOCI-
ATION, 73rd mid-year meeting, Chicago Marriott Ho-
tel, Chicago, Ill., April 28-29.

CHINA CHEM '87, international exhibition on chemical and
petrochemical industries, China International Exhi-
bition Center, Beijing, China, April 5-9.

CHLORINE INSTITUTE, winter meeting, Mayflower Ho-
tel, Washington, D.C., March 15-19.

ORUG, CHEMICAL & ALLIED TRADES ASSOCIATION,
91st annual dinner, Waldorf-Astoria Hotel, New York,
March 18; Spring luncheon, Sheraton Centre Hotel,
New York, N.Y., June 11.

FERTILIZER INSTITUTE, 1987 annual meeting, Marriot
Orlando World Center, Orlando, Fla., February 1-3.

PIRELLA GÖTTSCHE LOWE ASSOCIATION, interna-
tional conference on flame retardancy and fire safety,
Sheraton New Orleans Hotel, New Orleans, La.,
March 22-25.

INSTITUTE OF GAS TECHNOLOGY, 11th annual sym-
posium on energy from biomass and wastes, Hotel Royal
Plaza, Walk Olney World Village, Buenos Aires, Feb.
February 2-6.

INTERNATIONAL PRECIOUS METALS INSTITUTE, 11th
international precious metals conference, Brussels,
Belgium, June 14-19.

INTER-SOCIETY COLOR COUNCIL, scientific confer-
ence, Williamsburg Lodge, Williamsburg, Va., Febru-
ary 8-11.

NATIONAL PETROLEUM REFINERS ASSOCIATION,
85th annual meeting, Convention Center, San Anto-
nio, Tex., March 29-31; 12th international petrochemi-

cal conference, Convention Center, San Antonio,
Tex., April 6-7.

POLYURETHANE MANUFACTURERS ASSOCIATION,
Spring meeting, commercial development of new
castable systems, Fairmont Hotel, Dallas, Tex., April
26-29.

SOCIETY OF MANUFACTURING ENGINEERS, ad-
vanced ceramic '87 conference, Clarion Hotel, Cin-
cinnati, Ohio, February 17-19.

SOCIETY OF PLASTICS ENGINEERS, South Texas sec-
tion, fifth international conference on polyureth-
ane, Wyndham Hotel-Greenspoint, Houston, Tex., Febru-
ary 23-25; SPE-ANTEC, Boneventure Hotel, Los An-
geles, Calif., May 3-7.

SOCIETY OF THE PLASTICS INDUSTRY, 42nd annual
conference of the compoelase institute, Cincinnati
Convention & Exhibition Center, Cincinnati, Ohio,
February 2-6; vinyl formulators division, 9th annual
technical meeting and conference, Dadeland Hotel,
Dadeland, Fla., April 8-10.

THE FERTILIZER INSTITUTE, 1987 Annual Meeting
Orlando World Center, Orlando, Fla., February
1-3, 1987.

BUSINESS BRIEFS

ADVANCED MATERIALS as an emerging
technology will be covered in a luncheon ad-
dress by Dr. Harris Burle, the chief scientist
of the Air Force Materials Laboratory at
Cameron Station, Inc.'s fifteenth annual pro-
cess evaluation/research planning seminar
scheduled for January 15-16 in New York.
Dr. H. Spitz, Chem Systems chairman, will
open the two-day seminar with a plenary talk
on innovation and the chemical industry.

DAVE CORPORATION says its "Ultraform"
acetal copolymer grade H 2320, N 2320 and
P 2320 have received official listing by the
National Sanitation Foundation for use in
potable water fittings and appurtenances.
Ultraform acetal copolymer is manufac-
tured by Ultraform GmbH, a joint venture of
BASF and Degussa AG. The US subsidiaries
are building an integrated production facility
in Mobile, Ala., for startup in early 1988.

CREMILK PETROLEUM INC.'s Oil Field

Chemicals Division has developed a new
family of acidizing solvents for acid and non-
acid stimulation fluids. Trademarked "Vera-
Solv" acidizing solvents, the products are de-
scribed as complex blends available in a
range of five formulations for use with dif-
ferent types of crude oil.

DOW CHEMICAL Company is offering pre-
mium grade "Methocel" cellulose ethers for
specialty applications in the Japanese phar-
maceutical market. Japan is the world's
third largest pharmaceutical market, repre-
senting a "significant business opportunity
for Dow," the company says. Dow claims to
be the world's largest supplier of methylcel-
lulose and hydroxypropyl methylcellulose
products.

DU PONT COMPANY says it has obtained
exclusive marketing rights to an advanced
system for monitoring anticoagulant ther-

apy from Blotrack Inc., Sunnyvale, Calif.
Terms have not been disclosed. Du Pont says
Blotrack's ProTime Test System is the first
immediate, accurate test for critical dosage
management of the anticoagulant, warfarin.
Du Pont's "Cournadin" is said to be the
largest selling warfarin product, and is used
widely to manage blood clots in patients.

DYNAMIT NOBEL CHEMICALS has intro-
duced a new line of metal alkoxides in clear,
stable solution form. The products are used
to produce fine particle metal oxides via low
energy sol-gel technology for the modifica-
tion and property enhancement of catalysts,
glasses, ceramics and advanced coatings.

H-R INTERNATIONAL, an Edison, N.J., en-
gineering and construction firm serving the
energy, chemical and related industries, has
opened two new offices in Texas, at 4628
Loop Central Drive, Houston, and at 400 East
Anderson Lane in Austin. The offices will be
involved in contract maintenance for Texaco

December 22, 1986

BUSINESS BRIEFS

Chemical's Austin Research facility, con-
struction services for US Industrial Chemi-
cal's polyethylene plant in Latexco, and engi-
neering and construction of Denka
Chemical's maleic anhydride plant expan-
sion at Houston.

THERMOFIL INC. has introduced new,
highly chemically coupled glass-reinforced
polypropylene products available in 10
through 40 percent glass reinforcement lev-
els. ThermoFil says chemically coupled
glass-reinforced polypropylene has the low-
est cost per cubic inch of any engineering
resin.

UNION CARBIDE Corporation says its Taft,
La., plant set a company safety record, when
more than 1,100 employees worked more
than 10 million hours without a lost workday
case. Carbide says the plant has received
several awards over the past year in recog-
nition of its safety performance.

CHEMICAL MARKETING REPORTER